Univerzita Karlova v Praze
Přírodovědecká fakulta
katedra sociální geografie a regionálního rozvoje

Studijní program: Geografie
Studijní obor: Regionální a politická geografie

Ondřej Kohl

VÝVOJOVÁ TYPOLOGIE NEJRYCHLEJI ROSTOUCÍ ČÁSTI METROPOLITNÍCH USA V DESETILETÍ MEZI ROKY 2000 A 2010

THE DEVELOPMENTAL TYPOLOGY OF THE FASTEST GROWING PORTION OF THE METROPOLITAN USA IN THE DECADE FROM 2000 TO 2010

Diplomová práce

Praha 2011

Vedoucí diplomové práce: Doc. RNDr. Leoš Jeleček, CSc.

Prohlášení:

Prohlašuji, že jsem diplomovou práci zpracoval samostatně a že jsem uvedl všechny použité informační zdroje a literaturu. Tato práce ani její podstatná část nebyla předložena k získání jiného nebo stejného akademického titulu.

V Praze,

30.7. 2011

…….

Bc. Ondřej Kohl

Acknowledgments

In this place I would like to thank my longstanding academic advisor Doc. RNDr. Leoš Jeleček, CSc. for reading the text, making valuable comments regarding its content, and supervising the formal aspects of the thesis.

Contents

US States' Name Abbreviations

State/ DC	Abbreviation
Alaska	AK
Alabama	AL
Arkansas	AR
Arizona	AZ
California	CA
Colorado	CO
Connecticut	CT
District of Columbia	DC
Delaware	DE
Florida	FL
Georgia	GA
Hawaii	HI
Iowa	IA
Idaho	ID
Illinois	IL
Indiana	IN
Kansas	KS
Kentucky	KY
Louisiana	LA
Massachusetts	MA
Maine	ME
Maryland	MD
Michigan	MI
Minnesota	MN
Missouri	MO
Mississippi	MS

State/ DC	Abbreviation
Montana	MT
North Carolina	NC
North Dakota	ND
Nebraska	NE
New Hampshire	NH
New Jersey	NJ
New Mexico	NM
Nevada	NV
New York	NY
Ohio	OH
Oklahoma	OK
Oregon	OR
Pennsylvania	PA
Rhode Island	RI
South Carolina	SC
South Dakota	SD
Tennessee	TN
Texas	TX
Utah	UT
Vermont	VT
Virginia	VA
Washington	WA
Wisconsin	WI
West Virginia	WV
Wyoming	WY

List of Tables

List of Charts

List of Maps

List of Appendixes

Abstract

Key words:

metropolitan areas; USA; housing market; migration; population; economic crisis; housing bubble; recession; recovery

This text was written as a diploma thesis of master's degree study course "Regional and political geography." It focuses on the development between the last two censuses, of the fastest growing metropolitan areas in the United States. The economic crisis of the late 2000s has been a major turning point of the decade. The goal of the research was to create a developmental typology of the fastest growing metros. The text analyzes "classifiers" data in order to decide what developmental types have been among the metros. A major factor contributing to high population gains in the fastest growing metros was the migration induced by the housing bubble.

Abstrakt

Klíčová slova:

metropolitní oblasti; USA; realitní trh; migrace; obyvatelstvo; ekonomická krize; realitní bublina; recese; zotavení

Tento text byl napsán jakožto diplomová práce magisterského studijního oboru „Regionální a politická geografie.“ Zaměřuje se na vývoj nejrychleji rostoucích metropolitních oblastí ve Spojených státech mezi dvěma posledními sčítáními lidu. Ekonomická krize konce desetiletí byla významným vývojovým předělem. Cílem výzkumu bylo vytvořit vývojovou typologii nejrychleji rostoucích metropolitních oblastí. Text analyzuje klasifikační data za účelem rozhodnutí, jaké vývojové typy mezi metropolitními oblastmi byly. Významným faktorem přispívajícím k vysokým populačním ziskům v nejrychleji rostoucích metropolitních oblastech byla migrace vyvolaná realitní bublinou.

1 INTRODUCTION

1.1 Academic Background of the Author

Ondřej Kohl is a student at the Charles University in Prague, Faculty of Science, Czechia. Regional geography, urban geography and political geography have been the main fields of his academic studies. He has already centered his academic attention on the United States in his bachelor's degree final thesis that dealt with the structural characteristics of the US population and their changing geography, with the focus on the last two decades.

1.2 Introduction, Methodology and Structure of the Thesis

When one wants to comprehend the developmental dynamics of the geography of the US population, then a research on the metropolitan level is crucial.

The majority of the American population lives in metropolitan areas. Most of the US economic production takes place in the metros (metro is a term accepted in the American English according to the Oxford Dictionary). Metropolitan areas are the regions between which the major movements of the American population occur.

The US Census Bureau defines the Metropolitan Statistical Areas (MSAs) as follows: These areas are defined by labor market regions centered on a core county (by commuting ties). The metro areas are composed of statistical units of counties (US Census Bureau). Throughout the thesis there are frequently used shortened names for the metros, i.e. typically just the first core city in the MSA's official name (for example instead of a long name like "Los Angeles-Long Beach-Santa Ana, CA MSA" I would mostly use just "Los Angeles" or "metro Los Angeles" for the same statistical unit, see the table 12).

The Combined Statistical Areas that were used partly in my bachelor's thesis have not been used because of comparability and availability of the data, and because the dimension of metropolitan statistical areas suits better the purpose of this research.

The objective of this work is to understand the complexity of US population geography processes. The advantage of timing of my work can be used as there have been gradually released results of the 2010 US Census. These results allow me to work to certain extent with the development between the 2000 and 2010 data.

The text is structured into two main parts. The first part is analytical. It analyzes primarily the development of the fastest growing metropolitan areas. The second part creates the developmental typology of the metros drawing on the preceding analysis. The typology should help us to understand how well have distinct developmental types of the metros fared during the crisis and after it during the recovery period, but also to assess what are their prospects for the upcoming years.

In the analytical part of the thesis there are analyzed variables or factors, or better "classifiers" affecting the changes in geography of the metropolitan population listed in the table 1. When the geography of the metropolitan areas is conceived of, it is not just the changing spatial distribution of the population, but also its structural changes.

There has been a turning point in the economic development of the last decade. It was 2007 when the economic crisis began with the burst of the housing bubble. This crisis has had a profound influence on the dynamics of both internal and international migration flows within the United States. When we look at the changing spatial distribution of the US population, migration is a substantial factor. The spatial distribution is, of course, influenced also by difference in natural growth rate between the metros.

Migration and natural growth are movements changing the geography of population. The economic performance of the metro areas has a profound effect on the migratory behavior of the population, especially in the United States with its tradition of high rate of internal migration. One of the crucial factors influenced by economic performance is job creation. Job creation is one of the movements that influence one of the factors analyzed in this research. This factor is the metros' economic performance in the recovery period.

Another major factor influencing the recovery performance is metropolitan income growth. For the assessment of the recovery development this research mostly used the Metro

Monitor research that has been published by the Brookings Institution's Metropolitan Policy researchers. Another source of data of economic character that was used is an available metropolitan level data that are regularly released by the Bureau of Economic Analysis (an office established by the Department of Commerce).

Table 1: The Analyzed Developmental Classifiers/Factors

Migration	Domestic
	International
Natural growth	
Gross domestic product growth	Total
	Per capita
Housing affordability	Measure of affordability (median multiple)
	Housing bubble severity (according to median multiple value)
Human capital gains/level	College graduates migratory gains (age 25+)
	College graduates share of population
Smart growth status	Less restrictive
	More restrictive
Recovery from recession	Economic performance 2009-2010
Sources of domestic in-migration	County-to-county migration data

Source: author

Housing affordability is another important factor that has to be taken into account. Job creation, or more broadly opportunity creation, and housing affordability are the most relevant factors to be analyzed in order to understand the migratory behavior of the economically active population. Housing affordability may be a prime reason to move when the migrant is able to obtain a reasonable income in the new place of residence. The role of differences in taxation and administrative regulations between the metro areas is another factor which to some degree influences the migratory and business location preferences and decisions, and which may not directly influence the price of local real estate.

How did the burst of the bubble in 2007 affect the movements of the metropolitan population? The ensuing recession, which is mostly considered as finished by now, has

dramatically reduced the intensity of both domestic and international migration (Singer and Wilson 2010). In some metros the recession even changed the direction of net domestic migration. The same effect of bursting bubble affected also migration to suburbs and exurbs (Frey 2009).

First, we have to ask a few questions. What makes the difference? What are the factors that shape the spatial distribution of the US population? In the end it might be possible to come up with a typology of the fastest growing metros of the decade. This should help with understanding the changing geography of US population and hint at its future distribution. When the metros are classified, then it should be possible to find a model of development which has got through the crisis affected the least and which has the best outlook for the future.

Demographia (in The Impact of Smart Growth on Housing Affordability) in terms of smart growth status uses two designations: metros with responsive housing market (with weaker, that is less restrictive smart growth policy) and metros with prescriptive housing market (with stronger, that is more restrictive smart growth policy implementation).

"Responsive" housing market because the market in a metro without smart growth regulation is able to respond flexibly to changing demand for housing. The relationship between housing supply elasticity and lower risk of bubble creation mentions for example Glaeser et al. (2008). There are, of course, other factors that influence housing affordability like significant growth obstacles of natural character such as mountains or sea which might make further development expensive or impossible, and thus unable to respond to the changing demand flexibly. In such a situation the market could react with denser development even without the restrictive housing policies. However, in case people prefer less dense development, and the original place is not attractive enough to retain them in dense housing, then they might rather move to a region which offers affordable low density (suburban) housing.

"Prescriptive" housing market or housing market with stronger implementation of the smart growth puts in place policies and regulations that limit further development in certain ways. There are many smart growth policies, the best-known of them are probably the growth boundary, zoning or public transportation nodes.

What are the implications of the so-called smart growth policy for the American urban geography? There is an on-going and polarized academic debate on these issues. One of the crucial points of this debate is how much has this policy contributed to the last economic crisis. W. Cox (2008) argues that the housing market regulations made the financial crisis worse than it could have been without them in place.

The smart growth is a policy aimed at relatively sustainable growth of metropolitan areas. This objective can be realized through different kinds of legislative regulations, such as anti-sprawl measures or zoning. One of the controversial sprawl regulations is so-called growth boundary, which typically encloses an area in which there is only high density development allowed.

These smart growth policies have had a well-documented inflationary effect on housing price levels. This inflationary effect is easily expectable from an economic point of view. When there is a perceived scarcity of supply and high demand then there is a space for inflation. Speculative investors contribute to the price hike. The situation in the United States was complicated, though, with a large supply of easily accessible credit. The widespread practice of subprime lending which is associated with higher risk of debtor's default has contributed a decisive momentum for the bubble creation. The crisis appears to be a result of risky lending practice in the first place.

While there is no doubt that the smart growth policy has negative effect on housing affordability, the extent of its effect on the economic crisis is not as clear.

W. Cox (2011a) mentions that according to the Federal Reserve Bank of Dallas the property prices grew fast in the smart growth metros because of speculation attracted by supply constraint. This is not surprising finding as scarcity in combination with demand are factors searched for by the speculative investors.

We can look for a comparison with another Anglophone country with vast land supply. Two of the Australian metros are particularly suitable for the comparison with the United States, although all of Australia is a perfect example of inflation inflicted by the smart growth regulations.

Australian metros have some of the worst median multiple values compared to the United States' metros according to the 7th International Housing Affordability Survey by Demographia. This has well been described as a result of smart growth policy which has

dramatically affected Australia's housing affordability. Paradoxically, it has occurred in a country with plenty of potentially developable land. It has showed quite well the inflationary effect of the urban containment policy on the Australian housing stock. This is absolutely supportive of the findings in the United States.

In Queensland, particularly the Gold Coast development can be thought of as an Australian Florida. It has quite similar character of coastal housing development. The Australian states have had similar smart growth policy causing the housing prices to grow faster than they would without the policy. But one thing differed. The Australian state did not experience the price downturn Florida experienced after the burst of the bubble. The Australia's metro price inflation has had a steady development. W. Cox (2010c) explains this difference with a stricter lending regulation in the Australian counterpart, which did not create the price bubble of American dimensions. However, there are growing worries about possible housing crash in Australia as well, with news of already plunging prices in Melbourne (K. Collier in Herald Sun 2011). However, this decline in prices in Melbourne might be related to deregulation plans from the local government. I could not invest more time to research this in detail as it is not the objective of this text.

The second sample metro is Adelaide. A metro much smaller than Sydney or Melbourne, Adelaide has a vast potentially developable land in its surrounding region. Smart growth policy oriented at densification of housing development has made this metro as unaffordable as the two larger urban centers.

This research could not evaluate if there is a difference in the policy between Australian metros, or if this policy is uniformly enforced by the federal government. These two examples are mentioned here as a clear outcome of an undisputable inflationary effect of the smart growth policy.

Another factor influencing the spatial development of metropolitan areas is residential concentration of population on racial basis. This kind of "zoning" has often, arguably more evident impact on the spatial structure of a metro than the smart growth policies. The concentration of population on racial basis (also known as segregation) is an enduring pattern of American urban spatial fabric.

To really succeed in the metropolitan competition and obtain a better position in the urban hierarchy, the metros cannot just gain population weight. They need to achieve

corresponding or higher economic weight, as well. To relate the economic power, I use the gross metropolitan product measure, estimates of which are provided annually by the Bureau of Economic Analysis, an agency established by the US Department of Commerce.

This thesis divides the fastest growing metropolitan areas into groups (typology or classification) according to similar developmental characteristics. The metros have different developmental trajectories. The goal is to understand in what direction is the American metropolitan space development headed from the geographic point of view. Geography does not just comprise the spatial distribution of population. It also deals with the spatial differentiation of its structure. The fastest growing metros dynamics are results of major movements occurring in the American population.

The classification of the metropolitan areas is based on certain classifiers (factors) which are analyzed throughout the thesis and listed in the table 1.

Which are the leading metropolitan areas in growth rate? How is the spatial distribution of the US population influenced by the development in the real estate market? The housing construction itself has often generated significant part of a metro's economy. With the bust of the housing market, the metropolitan economies inevitably plunged.

The American suburban expansion or sprawl has benefitted from almost limitless possibilities for expanding the US cities spatially. The cycles of development have been obvious: An older neighborhood gradually ceased to fulfill actual housing needs and its residents moved out to adjacent suburban zones. This process has been frequently repeated. It has led to gradual decay of inner neighborhoods and even their depopulation. Some inner neighborhoods have empty lots in place of former, demolished housing. This can be pointed out in the case of Detroit where some initiatives (such as the Hantz Farms project) suggest that some inner city areas could well be reclaimed by forest or agriculture.

The land supplies have been sufficient for further sprawl sought-after by the automobile society. Then there have been environmentalists who opposed further expanding of the cities and have called for the smart or sustainable growth. The smart growth policy mostly encompasses denser development, old neighborhood revitalization and other approaches.

Another pro-smart growth policy argument has been infrastructure savings. Denser development requires lower infrastructure costs per housing unit than a low density suburban housing.

An undeniable factor for migratory decisions is the climate in the destination of moving. And it seems to gain in importance as many economic sectors nowadays can well be located anywhere where there is sufficient infrastructure and workforce. Many people prefer to live in a region with a lot of sunshine. Climate is undoubtedly a big draw in migratory behavior. California has been a big attraction with its Mediterranean climate and attractive natural landscape. More recently, metros like Phoenix or Denver reap their success partly from their sunny weather. It is not just lower costs what attracts people and companies to the Sunbelt.

Most of the American metropolitan population lives in the suburbs. American suburbia's most apparent difference in comparison to that of Europe is its low density. The United States still have a lot of developable land compared to Europe. The land is mostly cheaper. Housing is still relatively affordable, and the economic growth the United States experienced throughout the second half of the 20th century enabled middle class Americans to afford relatively large properties both in terms of floor space and lot rationing. The American suburban growth or sprawl has been mostly extensive in character. Housing developers have frequently built whole blocks of unified-design, mostly detached homes.

The extensive development was also, at least until the last economic crisis, enabled by affordable gasoline prices. Personal car is one of the essential exigencies of the suburbia. Automobile ownership allows the existence of vast suburban regions. The gasoline prices rise and the economic recession have changed American car market. During the decade Americans increasingly began to buy more compact cars that require less gasoline to run and are generally cheaper. The three automotive giants have reacted to the changed taste of the customer slower than their Japanese competitors. This might have lead to their collapse or forced restructuration, if they have not been expensively bailed out by the federal government which borrowed them time to get up-to-date with the new market demands.

1.3 The Research Questions and Hypotheses

In this place I can summarize the research questions and hypotheses coming out of the preceding introductory chapter.

I asked, more broadly, what are the factors that shape the spatial distribution of the US population. These factors are very much the same factors that contribute to the growth in the fastest growing large metros. I listed those developmental or growth factors that I assumed to be the most relevant for the purpose of the classification. The selection of the analyzed factors has been elucidated in the introductory chapter. They have been listed in the table 1 and explained that these factors should become the "classifiers".

The main focus of the thesis, as has been mentioned, is to create a developmental typology of the fastest growing large metros. The analytical part of the text will focus on the classifier data, given the expectation of being able to create a typology of the metros based on the analysis of the selected data.

I propose the following hypotheses:

1) The intensity of different growth factors will not be identical for all of the analyzed metros.

2) The metros might quite likely have different sets of developmental factors intensities that are behind their rapid growth.

3) It is probable that some of the metros have quite similar pattern of growth.

4) It should be hypothetically possible to identify these pattern similarities/differences and base the developmental typology on them.

5) After classifying the fastest growing metros according to their developmental type, the research might be able to find which of the developmental types (or models) has the best prospects in the post-recession development.

One of the research questions of the thesis to be responded is how much has the smart growth policy factored in the developments of the last decade. Smart growth status is one of the relevant developmental classifiers identified in the introduction, and some of the other

factors, such as housing affordability or housing bubble severity, appear to be closely related to it. Another contextually emerging research question is the development in the real estate market and its impact on the population geography.

A possible answer to the question − what is the model of success for the post-recession metros − should be searched for through the assessment of the hypothesis No. 5. The results of the classification could help with understanding the changing geography of the US population and with the assessment of the prospects of its future distribution.

1.4 The United States' Housing Bubble and the Economic Crisis of the Late 2000s

Risky lending in the mortgage market has been a major factor of the late 2000s crisis. High foreclosure rates have been recorded both in metropolitan markets with large housing bubble and without it. It has much to do with mortgage market regulations that can differ between states and with the policy of companies like Fannie Mae. Mortgage lenders were offering loan products that presented high levels of risk. To assess the level to which this risky lending was encouraged by the practice of the likes of Fannie Mae, would require a substantial study, that would take me time from focusing on the main objective of this thesis, and is mainly a task for economists. The mortgage lenders were further released from their part of the responsibility for the crisis by government bailout.

Housing prices peaked in different times in different parts of the country. The build-up of the housing bubble was geographically differentiated. Housing regulations have been identified as a significant factor for the geographic distribution of the housing bubble (for example Krugman 2005). These are the facts regarding the housing bubble and financial crisis that are relevant to the main objective of the thesis which is the creation of a typology of the fastest growing large metropolitan areas.

1.5 Discussing the Literature and Sources

Some of the principal sources for the research were internet sites of the Brookings Institution, New Geography and Demographia. These sites have articles concerning the metropolitan America written by experts on the matter.

While the Brookings Institution is mostly pro-smart growth oriented, authors publishing on sites such as New Geography and Demographia are staunchly anti-smart growth conservatives. The name "New Geography" is related to Kotkin's book (Kotkin 2000). Joel Kotkin and Wendell Cox are two principal scholars connected to the New Geography and Demographia sites. Joel Kotkin's articles are also published on the economic Forbes Magazines' internet site. He is an advocate of suburban growth as opposed to dense development. Aaron Renn of Urbanophile is another author whose articles are cited in this text.

In "The Costs of Smart Growth Revisited: A 40 Year Perspective" Cox (2011a) refers to Peter Hall's book "The Containment of Urban England" (1973). In his book, Hall, according to Cox (ibid.), made conclusions about the inflationary effect of urban containment (smart growth) in England after the World War II on the housing prices. Cox (2011a, 2011c) argues that the last economic crisis was worsened by the smart growth policy influence on housing prices. These conclusions have led me to include factors, such as smart growth status or housing bubble severity, to the analysis of the metropolitan areas' growth.

The research by Ewing et al. (2002) comes from the opposite side of the smart growth debate. The results in his article, written for the Smart Growth America, a major smart growth advocacy organization, measured sprawl of the metropolitan areas. His results have been used in my thesis as a part of data analyzed to assess metros' spatial containment level.

The State of Metropolitan America report co-authored by the Brookings Institution's demographer William Frey is an important insight into the condition of the metropolitan America. Its State of Metropolitan America Interactive Map proved to be particularly useful for the analysis. Several Frey's articles, mostly concerning metropolitan demographics, from the Brookings Institution's website have been cited too.

Some prominent economists such as Krugman of Princeton University and Glaeser of Harvard were cited and their opinions commented, especially their views on the housing market restrictions and macroeconomic issues.

Statistical data mostly come from the US Census Bureau, the Bureau of Economic Analysis, or the Internal Revenue Service. Most of the sources are dated from the latter part of the researched time period or after it, as the analysis required the most precise and up-to-date data and expert views. The methodology of estimate of GDP of metropolitan areas (or gross metropolitan product, GMP) by the Bureau of Economic Analysis is not flawless, and may produce some errors as was described in the case of Corvallis, Oregon (O'Connor 2010). However, it can be considered reliable for the largest metros that this thesis deals with.

2 THE DEVELOPMENTAL TYPOLOGY OF THE FASTEST GROWING PORTION OF THE METROPOLITAN USA IN THE DECADE FROM 2000 TO 2010

This is the main body of the thesis. Its first part has analytical character. The analysis focuses mostly on the primary subject of the research – the fastest growing large metropolitan areas – and their movements that can help with their developmental classification. The second part draws on the analysis and creates the developmental typology of the metros through identifying different developmental types.

2.1 The Analytical Part: Analysis of the Fastest Growing Metropolitan Areas' Developmental Classifiers

This research is oriented towards the fastest growing segment of the large metropolitan areas during the decade from 2000 to 2010. In the table 2 there are ranked the fastest growing metros with more than one million inhabitants in 2010 and with the rate of growth higher than 15.0 %. That is an average of more than 1.5 % per year. Also see the map 1 for a broader image of the growth geography of the US metropolitan areas in the decade.

Some of the metros were hit particularly hard by the burst of the housing bubble. The limit of one million inhabitants in the end of the decade was chosen for the analysis, because the necessity to focus on the most important, that is the most populous regions. Other authors (authors of analyses published on sites such as the Brookings Institution or New Geography) have also frequently used this conventional threshold when analyzing the American metropolitan space.

The text is concentrated on the metros with the highest growth of population. This is because with the growth of their population weight, they have been gaining higher position in the hierarchy of the metropolitan system. The growth in population has mostly been a consequence of economic importance ascendancy occurring in the metro area.

Table 2: The Fastest Growing Metros with Population over 1 million, 2000−2010*

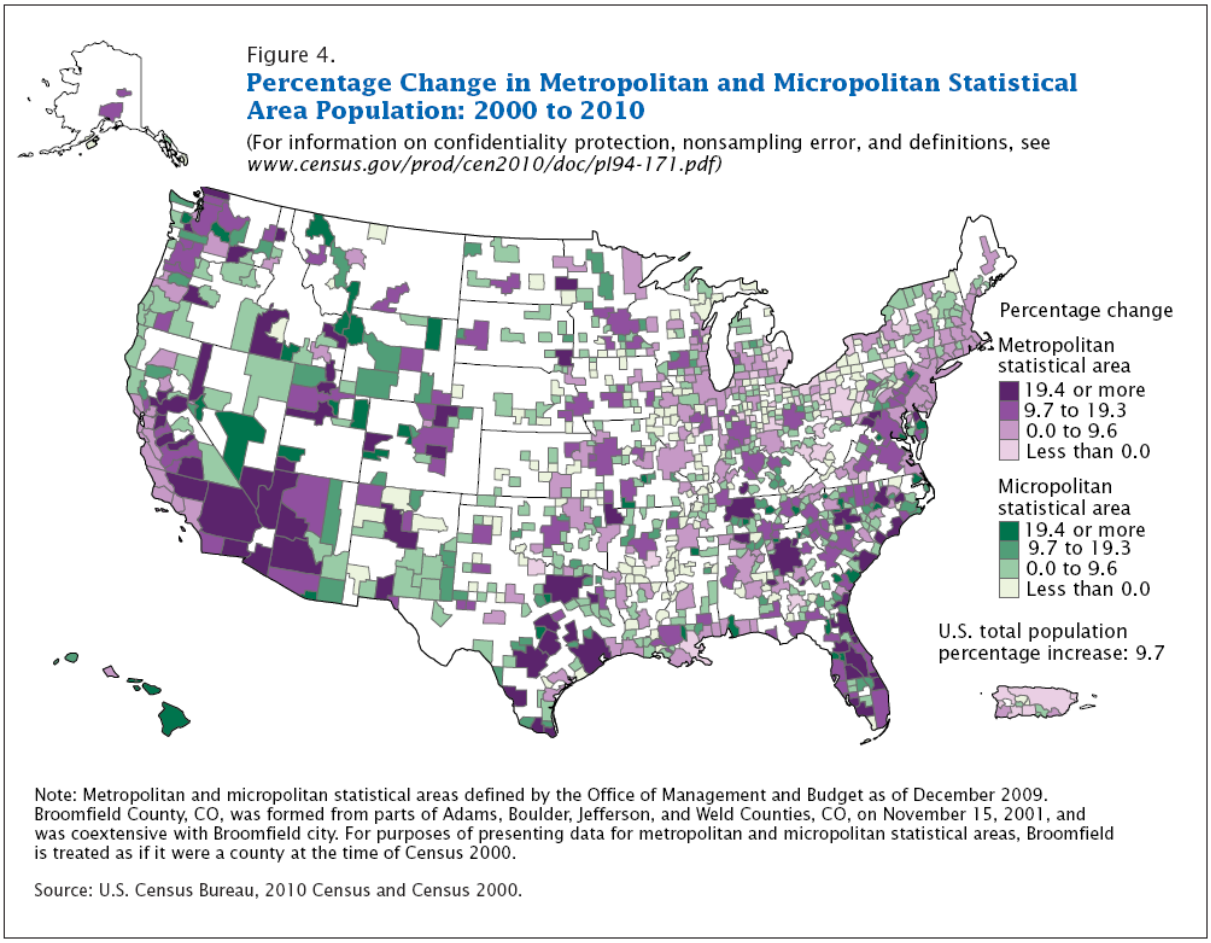
MSA	2000	2010	Growth	%
Las Vegas	1,375,765	1,951,269	575,504	42
Raleigh	797,071	1,130,490	333,419	42
Austin	1,249,763	1,716,289	466,526	37
Charlotte	1,330,448	1,758,038	427,590	32
Riverside	3,254,821	4,224,851	970,030	30
Orlando	1,644,561	2,134,411	489,850	30
Phoenix	3,251,876	4,192,887	941,011	29
Houston	4,715,407	5,946,800	1,231,393	26
San Antonio	1,711,703	2,142,508	430,805	25
Atlanta	4,247,981	5,268,860	1,020,879	24
Dallas	5,161,544	6,371,773	1,210,229	23
Nashville	1,311,789	1,589,934	278,145	21
Jacksonville	1,122,750	1,345,596	222,846	20
Sacramento	1,796,857	2,149,127	352,270	20
Denver	2,179,240	2,543,482	364,242	17
Washington	4,796,183	5,582,170	785,987	16
Tampa	2,395,997	2,783,243	387,246	16
Salt Lake City	968,858	1,124,197	155,339	16
Portland	1,927,881	2,226,009	298,128	15
Indianapolis	1,525,104	1,756,241	231,137	15

*metros that added more than 1 million in yellow
Source: US Census Bureau

Clearly, the domestic and international migration has to be taken into account. Then there are factors that are influencing the migration. Real estate prices and the housing bubble have strongly influenced the domestic migration dynamics. Domestic migration is statistically defined as moving between counties.

J. Kotkin (2010) characterizes a dynamic region as one with a combination of affordability and growing economy. Growing economy means job creation and thus an impulse for migration.

Map 1: Metropolitan Areas by Population Growth, 2000−2010



Source: US Census Bureau

The years 2007 to 2009 were estimated to have the lowest rate of domestic migration in the US post-war history (Frey 2010a). The international migration also slowed dramatically in the same period reflecting a lowered demand for migrant labor force during the recession.

W. Cox (2009) notes that the differences in housing costs are much greater between metropolitan areas than any other major category of personal expenditure. However, during the bubble house prices doubled and tripled in some metropolitan areas relative to incomes. He suggests that the bubble made people moving from less affordable areas to more affordable areas.

But Watkins (2011) warns against exaggerating the factor of housing costs by other authors. There are, of course, other crucial factors influencing the migratory behavior of the population, housing costs being just one of them.

Demographia in its report (US Metropolitan Area Population & Migration: 2000−2009, p. 20) defines "Safety Valve" metros as "markets with *severe* housing bubbles that received substantial migration from more expensive markets (coastal California, Miami and the Northeast). These markets include Las Vegas, Phoenix, Riverside-San Bernardino, Sacramento, Portland, Seattle, Orlando and Tampa-St. Petersburg." Most of the fastest growing metros that suffered from the severe housing bubble are included among the "Safety Valve" metros. Denver and Washington are exceptions (see the table 3).

Demographia (ibid., p. 20) also defines markets with *severe* housing bubble as metros where "housing costs rose to a *median multiple* of 4.5 or more (50% above the historic norm of 3.0)." The metropolitan areas with and without severe housing bubble are listed in the table 3.

The *median multiple* is defined as median house price divided by median household income:

Median Multiple = Median House Price / Median Household Income

Table 3: The Fastest growing Metropolitan Areas by Severity* of Housing Bubble

Metros WITHOUT Severe** Housing Bubble	Metros WITH Severe** Housing Bubble
Atlanta	Denver
Austin	Las Vegas
Charlotte	Orlando
Dallas	Phoenix
Houston	Portland
Indianapolis	Riverside
Jacksonville	Sacramento
Nashville	Tampa
Raleigh	Washington
Salt Lake City	
San Antonio	

Source: Demographia (US Metropolitan Area Population & Migration: 2000-2009)

Notes: * in the peak year for each metro;

** definition of "severe" housing bubble on the previous page;

"Safety Valve" metros are highlighted

When measured by the median multiple for values from 2010, eight of the fastest growing metropolitan areas were classified as affordable housing markets with median multiple's value between 2 and 3 (see the table 4). Atlanta ranked as the most affordable metro not just among the fastest growing but also overall among all metros in the United States with median multiple just 2.3.

Riverside ranked as moderately unaffordable market with median multiple 3.1. However, when compared with primary sources of its in-migration, its affordability is a big motivation to move. Los Angeles with median multiple 5.9 and San Diego with 6.2 are roughly twice as unaffordable as Riverside. Metro Riverside virtually is a cheap suburban area for these two metros. The same principle works even on a smaller scale when inhabitants of expensive inner suburbs move out to the cheaper outer suburbs, a phenomenon common throughout the United States. This is of course possible just in case there is enough developable land around the metro, and the development of the land is not heavily restrained by some of the stricter smart growth policies. Sufficiency of developable land in United States is generally still much higher than, say densely inhabited Europe.

This "suburban effect" has not worked just in a limited area of a metro, but also on inter-metropolitan level. The "Safety Valve" markets and generally all comparatively more affordable metropolitan markets are a good example of this process of seeking more affordable housing on a larger, more distant scale.

Most of the fastest growing metros owe their status to domestic migration, large proportion of which is motivated by this exact process of "suburban effect". Further in this analytical part of the work are charts showing the proportion of domestic migration, international migration and natural increase on population increase.

San Francisco (7.2), San Jose (6.7), San Diego (6.2), New York (6.1), Los Angeles (5.9), Seattle (5.0), Boston (5.0) and Miami (4.7) are the least affordable housing markets in the United States. These large metros have been losing hundreds of thousands inhabitants by domestic migration, with the peak of this out-migration having been the climax years of the housing bubble (2006−2007).

Chicago (median multiple 3.6) has been a major market with affordability better than some of the fastest growing metros. Metro Chicago lost more than half a million domestic migrants between 2000 and 2009 (more analysis on Chicago included). The root of the

relative affordability of metro Chicago may be its relatively affordable extensive fast-growing suburbs, and the worst economic performance among the largest metros (see the chart 1 for GMP performance comparison). The abundance of land in the Midwest plains and a lower degree of housing regulations are significant factors, as well.

The irregular pattern of the geography of the housing bubble and generally large differences in housing prices enabled people from the bubble regions to use the elevated prices of their homes as opportunity to move to larger or newer home in cheaper area, or moving to similar quality home and often keeping the cash from the quite large price difference.

Table 4: The Fastest Growing Metropolitan Areas Ranked by Affordability, 2010

Housing Affordability Measured by the Value of the "Median Multiple"	
Affordable Housing Markets	Median Multiple Value (2010)
Atlanta	2.3
Indianapolis	2.4
Las Vegas	2.6
Dallas	2.7
Phoenix	2.7
Houston	2.9
Jacksonville	2.9
Nashville	2.9
Moderately Unaffordable Markets	Median Multiple Value (2010)
Riverside	3.1
Tampa	3.1
Sacramento	3.2
San Antonio	3.2
Austin	3.3
Orlando	3.3
Raleigh	3.5
Salt Lake City	3.8
Washington	3.8
Charlotte	3.9
Denver	3.9
Seriously Unaffrodable Markets	Median Multiple Value (2010)
Portland	4.4
Severely Unaffordable Markets	Median Multiple Value (2010)
none of the fastest growing metros	

Source: table on the basis of data from Demographia (US Metropolitan Area Population & Migration: 2000−2009)

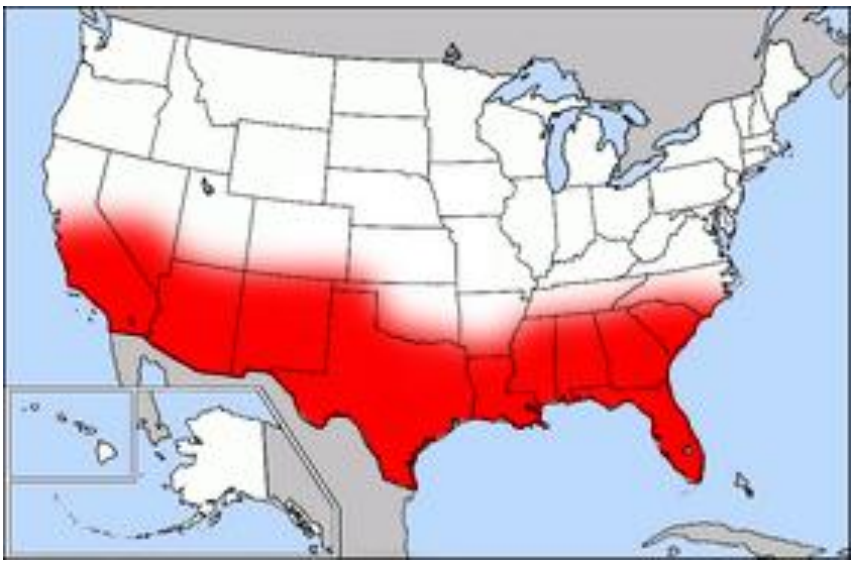
It is important to realize that there are significant differences in property taxes between states, counties and municipalities. Other taxes, such as income taxes or sales tax also differ widely with jurisdictions.

The results of the 2010 census show that the trend of suburbanization continues unabated. The suburban fringe of metropolitan areas grew much faster than their core. J. Kotkin (2010) notes that suburban counties have accounted for 85 % of metropolitan growth in the last decade. The fastest growing counties in the United States are typically those on the urban fringe of large metropolitan areas with growth potential.

The burst of the housing bubble was, not surprisingly, accompanied by slowdown in suburban development as mentioned for example in Frey (2010). This slowdown in suburbs has contributed to higher growth of core cities as some people who would have moved out to the suburbs were retained in the city. The share of employment located in the suburbs is also rising. When this trend is concentrated to certain growth centers in the suburbs, then it is contributing to multi-nuclei character of metropolitan areas.

During the decade, most of the population growth occurred in the South and the West region (the two statistical regions accounted for 84 % of the population increase). Almost all of the fastest growing metros were located in the southern part of the United States, which is also known as the Sunbelt (see the map 2 below).

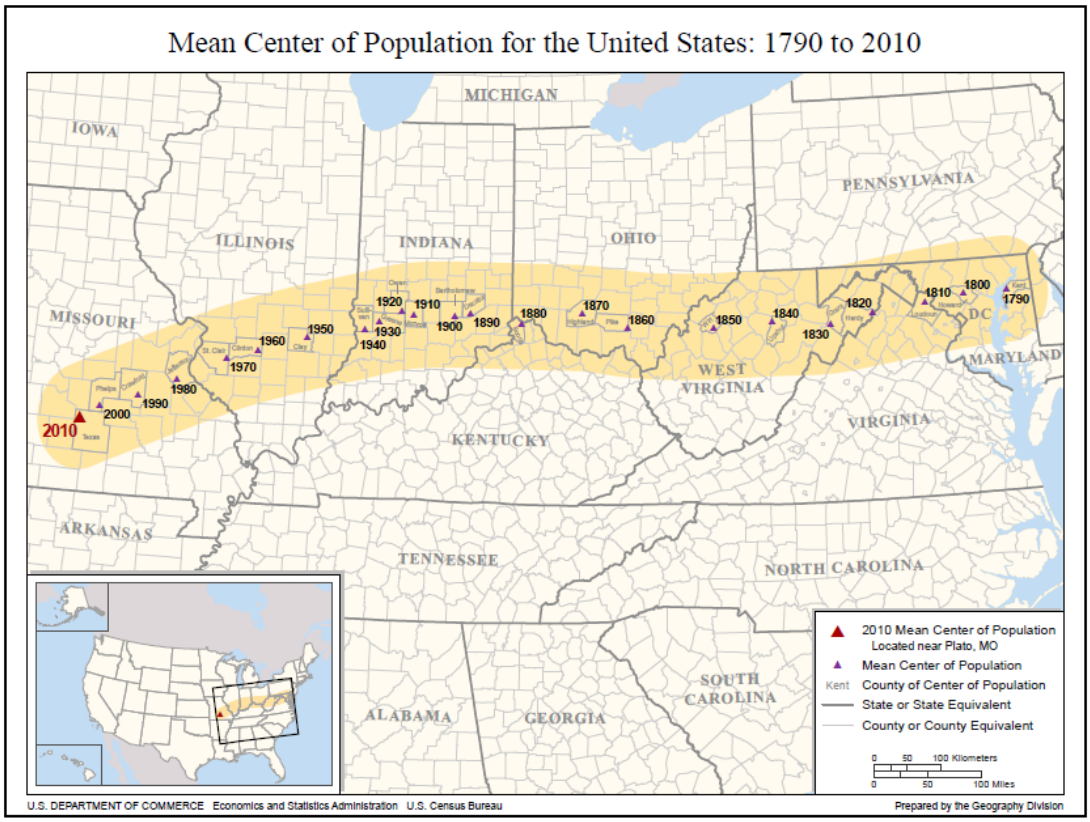
Map 2: The Sunbelt



Source: University of Texas at Austin, via Wikipedia

This is not a new pattern, as the Sunbelt metropolitan areas were the fastest growing also in the ‘90s (for example Kohl 2008). For a historical illustration of the gradual population shift towards the West and the South, see the map 3 below showing the mean center of population from 1790 to 2010.

Map 3: Mean Center of the US Population, 1790–2010



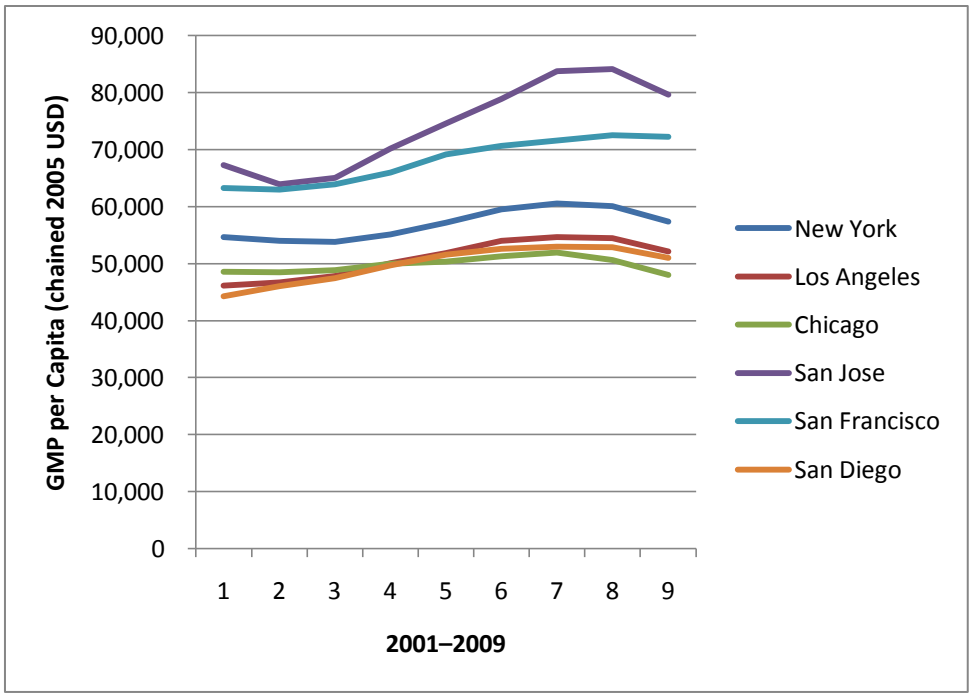
Source: US Census Bureau

New housing fulfills better the needs of modern life style in their higher share of gated communities development and lower density allotment. Quoting Sanchez and Lang (2002, p. 2) who analyzed the American Housing Survey of 2001: “Gated communities are more common in the new metropolitan areas of the Sunbelt, such as Dallas, Houston, and Los Angeles.”

The largest metros New York, Los Angeles, Chicago, San Francisco, Boston and Miami have been losing population strongly by domestic migration. These biggest urban centers, though, are still the main gateways for international migrants. See the largest receivers of international migration in the table 5. International migration in many cases made

for or overrode the domestic migration losses, and together with natural growth contributed to favorable pace of growth in these metros. They became sources of domestic migration, the direction of which has significantly affected the fastest growing metros list. As major sources of domestic migration, these metros have to be given attention in this text. See the performance comparison between the gross metropolitan product per capita for the largest metros in the United States in the chart 1. All of them show decline in economic production following the burst of the housing bubble. Some, such as the Silicon Valley's San Jose, also display the recessive influence of the early 2000s dot-com bubble burst and early 2000s recession.

Chart 1: Gross Metropolitan Product per Capita, Metros, 2001–2009



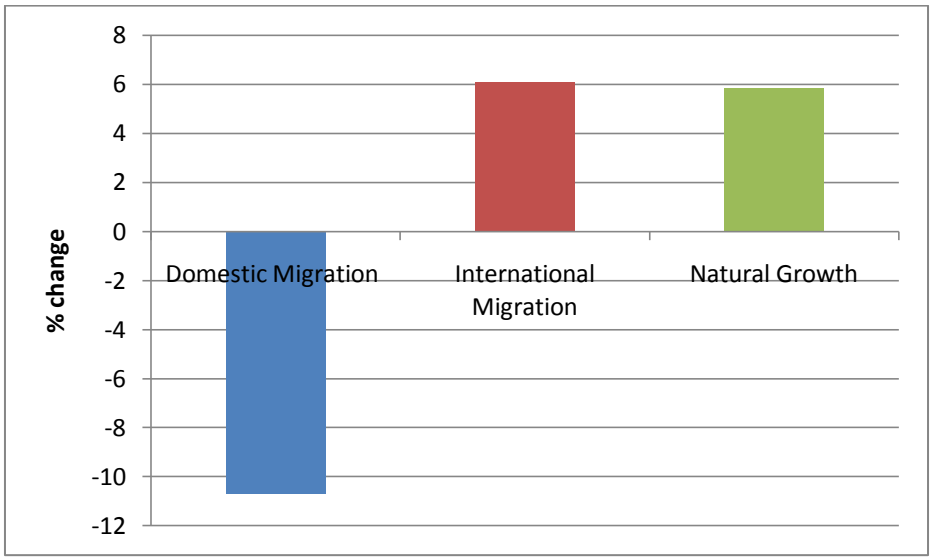
Source: US Department of Commerce: Bureau of Economic Analysis

Metropolitan areas with more than 10 million inhabitants were the slowest growing (Demographia US Metropolitan Area Population & Migration: 2000−2009). While they kept strong gains in natural increase and international migration, as already mentioned, they were losing heavily by domestic migration. Metropolitan areas with 5 to 10 million inhabitants managed to grow above national average even with almost 3 % net loss by domestic migration between 2000 and 2009 (ibid.). Metros with 2.5 to 5 million were the fastest growing segment of the decade, despite metros with 1 to 2.5 million inhabitants gaining more from domestic migration (ibid.).

The population of metropolitan New York, the largest metropolitan area in the United States, grew by 4 % (Demographia US Metropolitan Area Population & Migration: 2000−2009). However, it lost almost 11 % of its inhabitants to domestic migration (see the chart 2). This means that there were almost 2 million more people leaving the metropolitan area than moving in domestically. New York would actually lose population without the substantial gains from international migration (+1.1 million, ibid.). New York, as a major immigration gateway, ranked first in international migration gains from 2000 to 2005 (see the table 5).

The whole of the Northeast has been expensive both in terms of business costs and living costs. Data from different authors show that housing costs are behind the most of the variability in living costs between the US metropolitan areas, and generally between the regions.

Chart 2: Population Growth Composition, Metro New York, 2000–2009



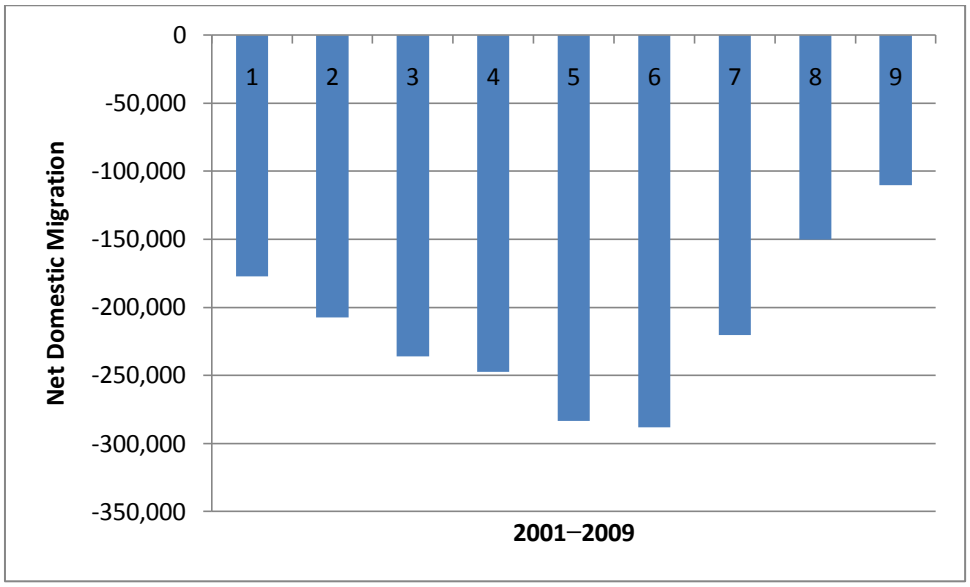
Source: computation on the basis of US Census Bureau data

While New York has retained its international migration gateway status and its attractiveness to international migrants, it has been losing large numbers of middle class inhabitants (for example Bowles 2009). They have preferred moving to more affordable housing markets with adequate job growth. Such places have ranked among the top population gainers of the decade. This outflow of middle class Americans leaves New York and other expensive large markets with larger social disparities, as they leave behind the rich who can afford to live there and the poor. The middle class might be weakened. The

businesses have been relocating to cheaper, more business friendly metros of the South. Less regulation and less unionized labor have drawn manufacturing from the North.

It is important to know when the domestic migrants from New York were leaving the metropolitan area the most, because New York was one of the largest sources of domestic migrants flowing into the fastest growing metros that are the subject of this research. In the chart 3 we can see that 2005 and 2006 were the peak years of the domestic out-migration from the metro (corresponding to the housing bubble build-up) when the metro New York was losing almost 300 thousand people a year. After the burst of the bubble in 2007, the out-migration numbers fell abruptly. According to Zillow data metro New York's median home sale price peaked in 2007 at 430 thousand dollars and in 2011 it was at 360 thousand. Demographia (US Metropolitan Area Population & Migration: 2000−2009) classified New York as a metro which experienced a severe housing bubble.

Chart 3: Net Domestic Migration, Metro New York, 2001−2009

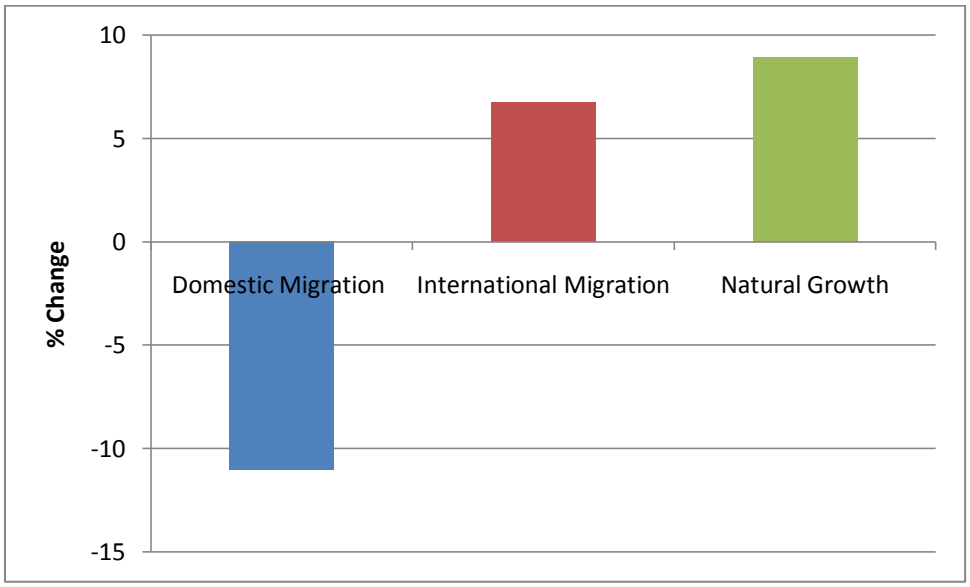


Source: US Census Bureau

Los Angeles, the second largest metro in the United States, and the largest metro both of the West and the South, recorded very similar rate of domestic out-migration as the East Coast's New York. Even with higher rate of natural growth in metro Los Angeles compared to New York, this metro would lose population if it did not gain substantial international migration inflow (see the chart 4). The similar hierarchical position in the US economy and smart growth regulations are reflected in approximately equal value of housing median multiple, around 6 in 2010 for both of the metros (7th Annual Demographia International

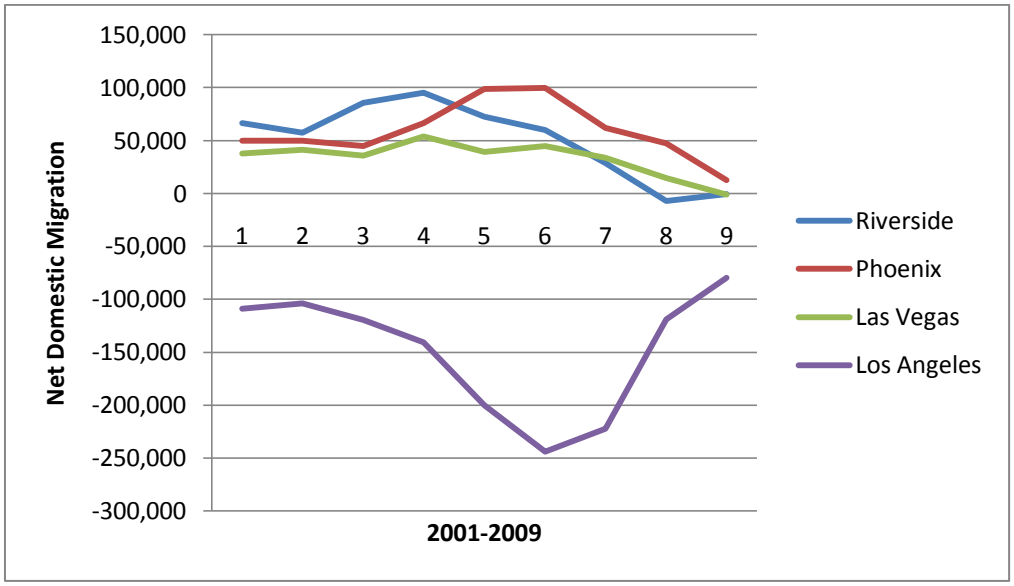
Housing Affordability Survey). Despite this value being down from its peak at 11 in 2007 in Los Angeles, it still classifies the two large metros as "severely unaffordable" housing markets (ibid.).

Chart 4: Population Growth Composition, Metro Los Angeles, 2000–2009



Source: computation on the basis of US Census Bureau data

Chart 5: Net Domestic Migration in Selected Metros, 2001−2009



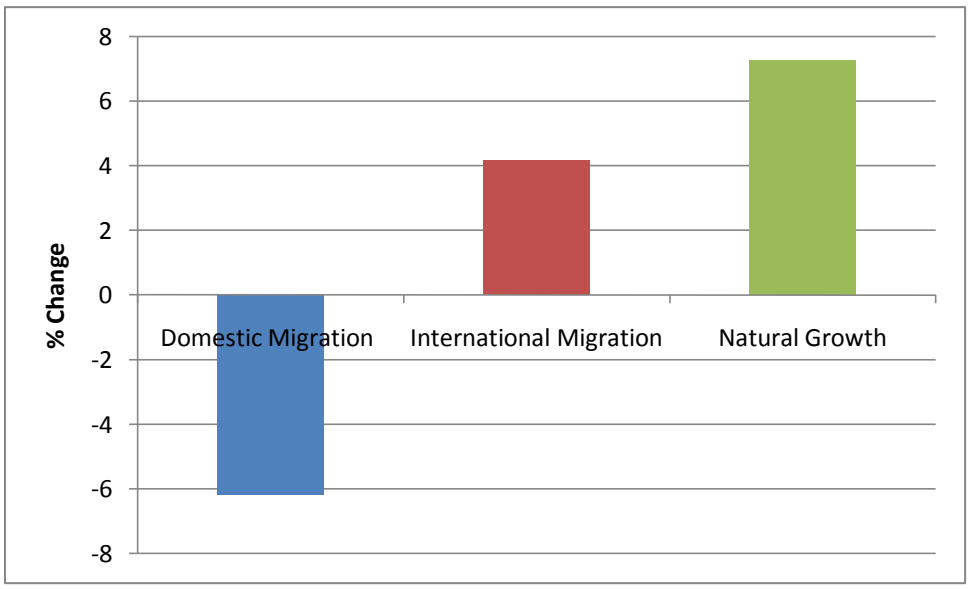
Source: US Census Bureau

In the chart 5 there are well visible the out-migration losses of Los Angeles during the decade. There is an apparent peak year of 2006 related to the housing bubble. Las Vegas, Phoenix and Riverside roughly present a reverse of Los Angeles' out-migration, as these

metros were some of the major destinations of Los Angeles' bubble movers. Metro Los Angeles median housing sale prices peaked in 2007 at roughly 585 thousand dollars and then fell down to 390 thousand in 2011 (Zillow data).

Metro Chicago recorded some of the highest rates of suburban growth with its suburban Kendall County having been the fastest growing county of the decade from 2000 to 2010. Despite of this the metropolitan area has been losing heavily by domestic migration like the other biggest metros in the country (see the chart 6 below).

Chart 6: Population Growth Composition, Metro Chicago, 2000–2009



Source: computation on the basis of US Census Bureau data

Migratory flows from expensive coastal California (mainly Los Angeles Metro area, the Bay Area metros, and metro San Diego) helped put places like Las Vegas, the fastest growing metro of the decade, Phoenix and Riverside on the map of the fastest growing metros. The escalating prices of housing in the coastal California have driven people to relocate to the booming, comparatively cheaper, aforementioned destinations. The coastal California metros have become some of the least affordable housing markets in the United States as measured by median multiple (7th Annual Demographia International Housing Affordability Survey).

Phoenix and Riverside have been the metros with the highest absolute gains in domestic migration. They both gained around half a million inhabitants through the domestic migration between 2000 and 2009 (see the table 6). And they both grew in a pace around 30

% in the decade, reaching population larger than 4 million. Phoenix has been receiving much higher rate of migration from abroad than Riverside. Their net gains from international migration were 220 and 94 thousand people, respectively.

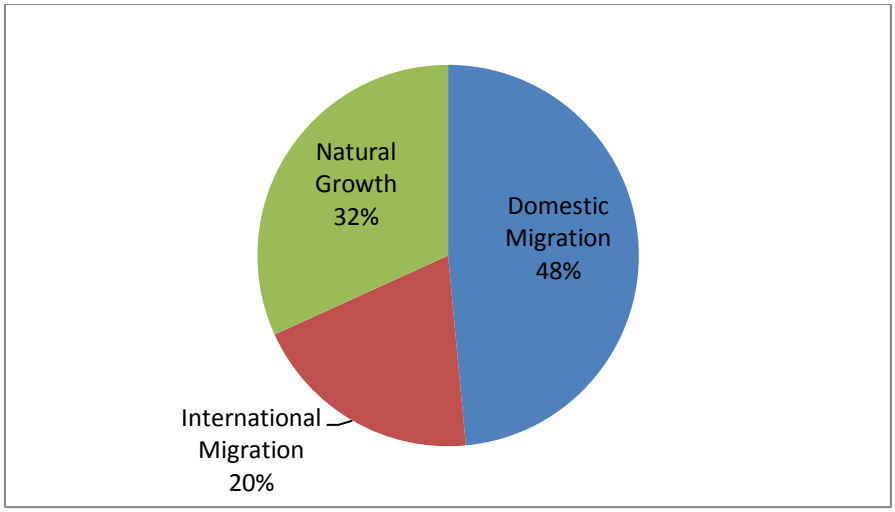
Table 6: The Biggest Nominal Gainers of Domestic Migration, 2000–2009, Metros with Population Higher Than 1 Million in 2009

MSA	2000 Population	2000–2009 Net Domestic Migration	% Change
Phoenix	3,278,661	543,409	17%
Riverside	3,277,578	469,093	14%
Atlanta	4,281,905	428,620	10%
Dallas	5,196,188	317,062	6%
Las Vegas	1,393,370	311,463	22%
Tampa	2,404,273	260,333	11%
Charlotte	1,340,417	248,379	19%
Houston	4,739,414	243,567	5%
Austin	1,265,715	234,239	19%
Orlando	1,656,835	225,259	14%

Source: US Metropolitan Area Population & Migration: 2000−2009, Demographia

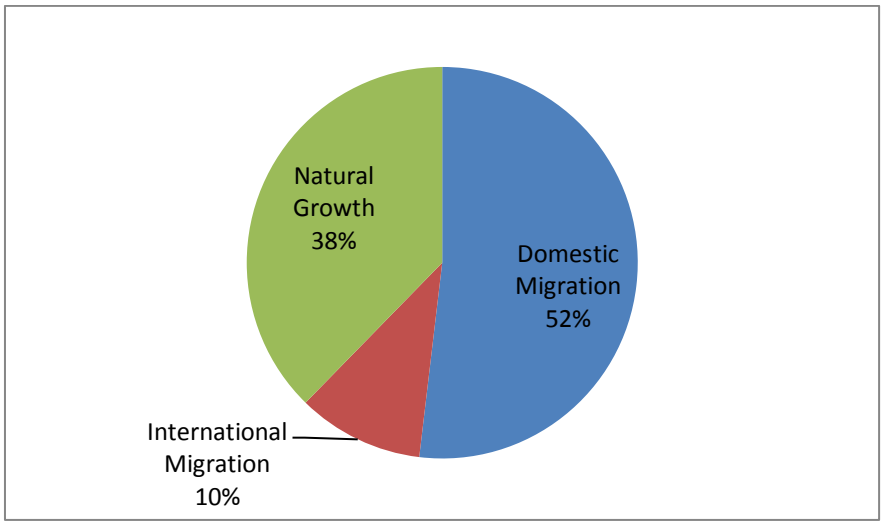
Phoenix and Riverside have been receiving a lot of people moving from Los Angeles metro area escaping the overheated bubble housing market. As is clear from the two following charts, both Phoenix and Riverside owed around a half of their growth in the decade to domestic migration (see the charts 7 and 8).

Chart 7: Population Growth Composition, Metro Phoenix, 2000–2009



Source: computation on the basis of US Census Bureau data

Chart 8: Population Growth Composition, Metro Riverside, 2000–2009



Source: computation on the basis of US Census Bureau data

Both of the metros also have substantial populations of international immigrants (the largest share of them from neighboring Mexico) in lower income strata. Both Phoenix and Riverside-San Bernardino have substantial Hispanic populations (32 % and 46 %, respectively, 2009, State of the Metropolitan America, Interactive Map).

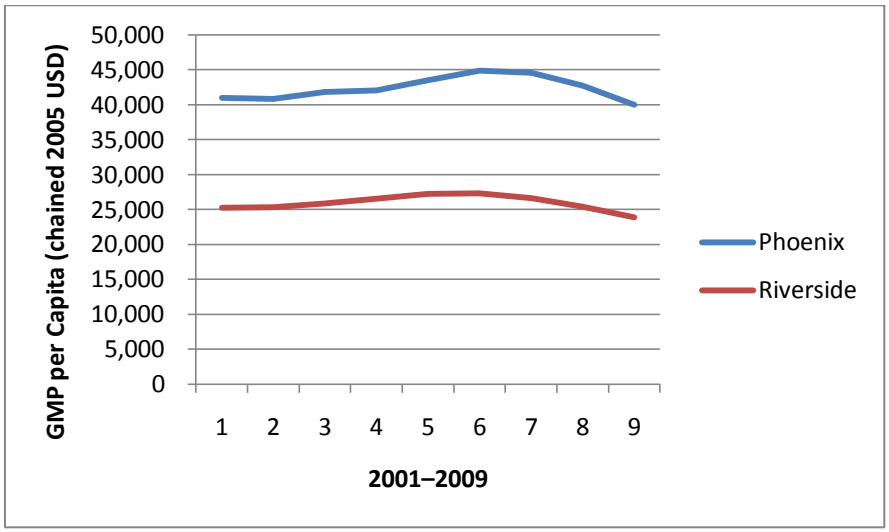
Riverside had a high rate of foreclosures (for example Hoak 2010). Riverside metro area, also popularly known as the Inland Empire, is technically a suburban area of the Los Angeles metro. This commuting connection is statistically expressed in Riverside being part of the combined statistical metropolitan area of Los Angeles. This development was quite expectable, as the region offers cheaper land than Los Angeles and Orange County. With less administrative restraint to real estate development and sufficiency of relatively cheap land, the region was destined to massive building development.

Riverside home prices peaked around 430 thousand in 2006, and since then fell by more than a half to 200 thousand in 2011 (Zillow). The proximity to Los Angeles and San Diego keeps Riverside's home prices high.

Riverside has fared much worse than Phoenix during the recovery as measured by unemployment in 2011 in Riverside at 13 % and in Phoenix at 8 % (lower than national average of 9 %, Department of Labor). Phoenix's better structured and diversified economic structure has recovered and its unemployment is under the national average. That is a great accomplishment considering that Phoenix has been one of the hardest-hit metros by the burst of the bubble. Phoenix's gross metropolitan product per capita is about 60 % higher than that

of Riverside (Bureau of Economic Analysis). The GMP per capita of both of the metros displays a steep decline after the burst of the housing bubble (see the chart 9), reflecting the losses inflicted in all of the sectors connected to housing. Metro Phoenix's median home sale price peaked in 2006 at 260 thousand and fell to 140 thousand in 2011 (Zillow). Clearly, Phoenix's diversified economic base was less affected by the downturn in the housing and financial sectors.

Chart 9: GMP per capita, Phoenix and Riverside, 2001−2009



Source: Bureau of Economic Analysis

It has not been just suburban housing developers who took the advantage of Riverside's cheap land. Large companies have established their sprawling logistic centers for the west coast in the area, making it the largest hub for inland movement of goods coming from the Los Angeles and Long Beach ports. The scale of the development and its character has prompted some urban sprawl opponents to call Riverside one of the worst examples of urban sprawl in the country, if not the worst.

The IRS data on county-to-county migration have shown clearly the pattern of suburbanization that has been coming from the Los Angeles, Orange County and partly from San Diego. So did the bubble (one of the worst in the country) occur in Riverside even when it has relatively lower level of administrative spatial restraint to new housing? Riverside was a "Safety Valve" housing market receiving massive in-migration from the severe bubble markets inflating its home prices (Demographia US Metropolitan Area Population & Migration: 2000−2009).

Las Vegas has not been a surprise at the top of the fastest growing large metros list. It already topped the list in the '90s. The growth rate declined from 83 % in the '90s to 42 % in the next decade (US Census Bureau), but it still remained with a small margin the fastest growing metro with more than a million inhabitants, just ahead of Raleigh.

It has not just profited from its booming gambling and tourism sectors, it has also benefited from the cost inflation and lower economic growth in its large western neighbor, California. With the fast influx of Californians and others, Las Vegas' housing construction sector boomed.

Affordable housing and low cost business environment combined with fast economic growth in the main sectors of its economy creating jobs seemed to be a recipe for success. In 2010 Las Vegas still kept its position among the most affordable US metropolitan housing markets (7th Annual Demographia International Housing Affordability Survey). In the aftermath of the crisis the market has been flooded with repossessed homes, further driving the prices down.

The character of its economy has been different than that of its domestic migration rivals like Austin or Raleigh. Sectors like gambling, tourism, and homebuilding, were all industries attracting higher proportion of less educated workforce. This has contrasted with the human capital flowing to the metros on the next ranks of the fastest growing list after the burst of the housing bubble.

It was an apparent consequence of Las Vegas' orientation towards industries that employ larger numbers of people with lower degree of attained education. Austin, Raleigh or Charlotte, they have all attracted higher share of college educated professionals.

Demographer William Frey (2011), though, showed that Las Vegas had one of the fastest growing college graduate metropolitan populations at least prior to the housing bust (see his rankings in the table 7). Las Vegas was successful in attracting young professionals who were escaping the overheated housing market of coastal California. However, the burst of the bubble made a strong impact on Las Vegas' college graduate migration, while places like Austin or Raleigh continued to gain, some of them even faster than before the beginning of the recession.

This halting of the overall migration, not just of that of the higher educated, is typical of the "Safety Valve" markets that lost their migration drive after the bubble burst. Portland,

Oregon has been an exception as this metro popular among the college educated kept high inflow of them even after the burst. This occurred despite the fact that Portland has been a "Safety Valve" metropolitan area gaining migrants from even more inflated housing markets mainly in neighboring California. The overall in-migration dropped precipitously.

Table 7: Net Migration of College Graduates, Metros, 2005–7 and 2007–9

Table 1: Adults with College Degrees: Major Metropolitan Areas with Highest Average Annual Net Migration Rates for periods 2005-7 and 2007-9*

2005-7		2007-9	
Metro Area	Rate	Metro Area	Rate
1 Charlotte	2.77	1 Austin	2.81
2 Austin	2.31	2 Raleigh	1.98
3 Tucson	2.13	3 Portland	1.59
4 Riverside	2.07	4 Riverside	1.34
5 Phoenix	2.07	5 Phoenix	1.31
6 Las Vegas	2.06	6 Charlotte	1.30

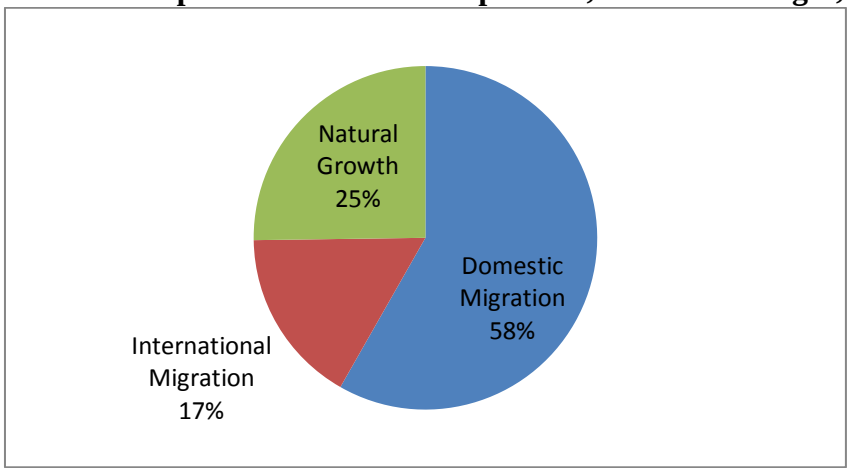
'Average Annual Net Migration of Adults (age 25+) with bachelors degrees per 100 resident adults with bachelors degrees among 52 metropolian areas with populations exceeding one million persons

Source: William H. Frey, Brookings Institution analysis of 2005-7 and 2007-9 American Community Survey multiyear estimates

Source: Frey (2011)

Quoting W. Frey (2011, p.1): "Las Vegas showed a drop in college graduate net migration from an average of nearly 5,000 per year in 2005–2007 to less than 500 per year in 2007–2009." The overall share of college educated population remained still lower than in its major growth competitors.

Chart 10: Population Growth Composition, Metro Las Vegas, 2000–2009



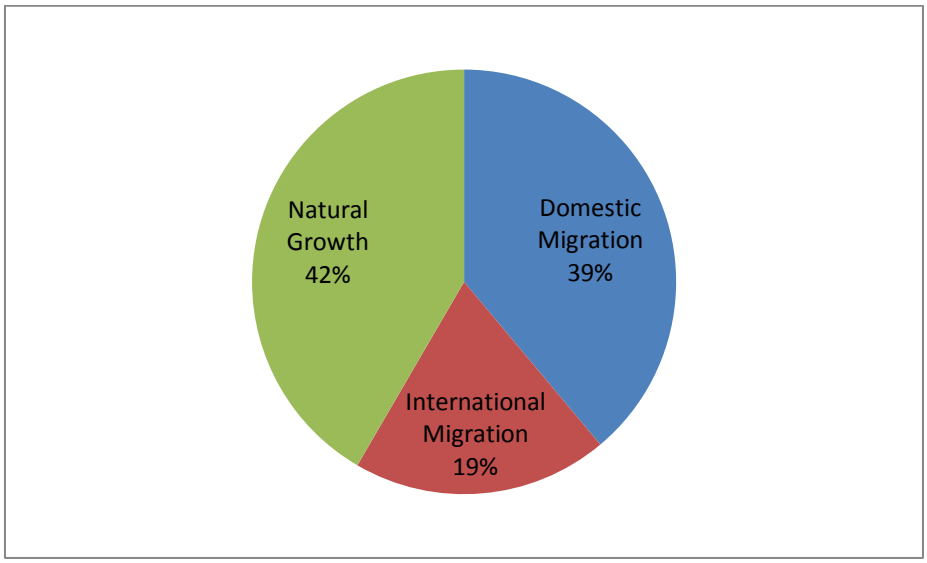
Source: computation on the basis of US Census Bureau data

The main source of Las Vegas' population growth in the last decade was, indeed, domestic migration (see the chart 10). Las Vegas with its housing bubble driven economy has been hit the most by the recession, not just among the fastest growing metros. The loss of employment and income has slowed, but continued into the recovery period of 2009 and 2010.

Among the fastest growing metropolitan areas, there have been some of the metros with more than 5 million inhabitants. Houston, Dallas-Fort Worth and Atlanta (highlighted in the table 2) are the three metropolitan areas that added more than 1 million inhabitants between the last two censuses.

However, since the onset of the recession, Atlanta, as opposed to the two Texan metros, lost much of its growth energy. Dallas and Houston continued to draw diminished, but still higher numbers of domestic migrants even in the years after the bubble burst. All of them attracted also considerable number of international migrants. Atlanta, while gaining more than 1 million inhabitants in the decade, actually lost jobs. This led inevitably to an alarming decline in per capita production and income.

Chart 11: Population Growth Composition, Metro Atlanta, 2000–2009



Source: computation on the basis of US Census Bureau data

According to Cardanithan (2011), between 2000 and 2009 Atlanta experienced the highest decline in income per capita among the 30 biggest metros. Atlanta showed worse results than such a loser of the decade as Detroit. Atlanta has had all the components of population growth high – domestic and international migration, and birth rate (see the chart

11). Atlanta had one of the highest rates of natural increase among metros with more than one million inhabitants in the decade. The metro has attracted a lot of young migrants who create families. Atlanta is home to large proportion of African Americans who still have relatively high birth rate and to fast growing Hispanic community that also displays above-average natural increase.

Atlanta's spatial structure is not just influenced by low-density sprawling development. There are basically no natural obstacles in the way of geographic expansion of the metro. Pro-growth oriented local government also puts little restraint on the development. Atlanta, Houston and Indianapolis are among the least urban containment oriented metros in the country (Downs 2004, Puentes et al. 2006).

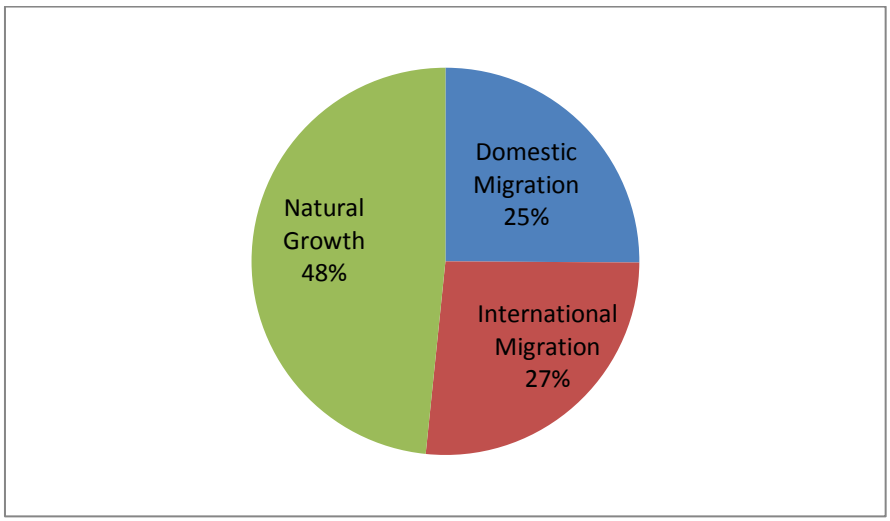
One of the most evident patterns in Atlanta's geography is its polarization between the northern and southern region. The northern suburbs where there have developed some of the most prominent suburban business centers are largely white, while the southern suburbs are majority African-American (my analysis of "Mapping America: Every City, Every Block" by the New York Times). African-Americans form 31 % of the metropolitan population (2009, State of the Metropolitan America, Interactive Map). Atlanta has been successful in attracting African-American migrants, especially from the Rust Belt cities. Downtown Atlanta has some mostly white and gentrified parts. The fast growing Hispanic community (10 %, 2009, ibid.), with the largest concentration along the Northeast Expressway, adds to the bipolar geography of the metropolitan area. Some outer southern suburbs are mostly white.

Atlanta's migration gains culminated in 2006–2007, but declined rapidly in the following year (Demographia US Metropolitan Area Population & Migration: 2000−2009). Between 2000 and 2009 Atlanta rose by 29 % from 4.2 to 5.5 million (ibid.). Atlanta was one of the bubble growth metros, and when the bubble burst, so did its in-migration (Frey 2009). Atlanta was receiving movers from the severe housing bubble metropolitan areas. In the following two years Atlanta's economic production per capita recorded steep decline, even with almost halting in-migration.

The *median multiple* remained at or below 3, values considered to represent affordable housing, in a number of high growth metros, such as Atlanta, Dallas-Fort Worth and Houston and other metros throughout the bubble (7th Annual Demographia International Housing Affordability Survey). These three middle-sized metros were the biggest gainers of people

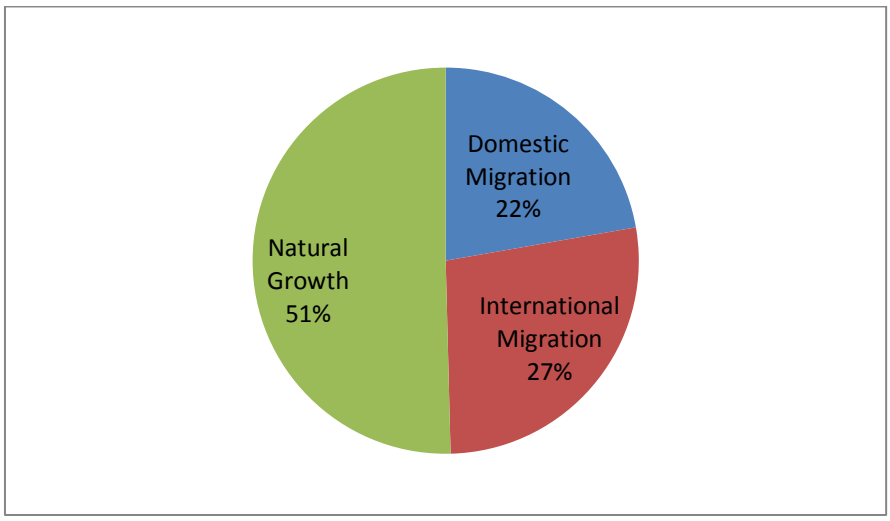
during the decade (in nominal values). All the four big Texan gainers are favored both by domestic migration families and young Hispanic migrants who have higher birth rate. African-Americans in these cities have also higher birth rate contributing to growth. Compared to Atlanta, Dallas and Houston relied more for their growth on the international migration and less on the domestic migration (see the charts 12 and 13).

Chart 12: Population Growth Composition, Metro Dallas, 2000–2009



Source: computation on the basis of US Census Bureau data

Chart 13: Population Growth Composition, Metro Houston, 2000–2009



Source: computation on the basis of US Census Bureau data

Despite keeping low value of the *median multiple*, Atlanta's suburbs were strongly hit by the downturn. While Atlanta's in-migration almost stalled, Dallas and Houston continued to attract large numbers of domestic migrants. Texas had its own, though less severe, housing crisis earlier in the '80s to '90s leaving the state better prepared with lending regulations limiting the extent of subprime lending.

Three of the counties of the Atlanta metro area made it to the list of the ten fastest growing counties in the US (see the table 8). All of them are typical suburban growth poles.

Table 8: The Fastest Growing Counties

Population Change for the Ten Most Populous and Ten Fastest-Growing Counties: 2000 to 2010

(For information on confidentiality protection, nonsampling error, and definitions, see *www.census.gov/prod/cen2010/doc/pl94-171.pdf*)

County	Population		Change	
	2000	2010	Number	Percent
MOST POPULOUS				
Los Angeles, CA	9,519,338	9,818,605	299,267	3.1
Cook, IL	5,376,741	5,194,675	–182,066	–3.4
Harris, TX	3,400,578	4,092,459	691,881	20.3
Maricopa, AZ	3,072,149	3,817,117	744,968	24.2
San Diego, CA	2,813,833	3,095,313	281,480	10.0
Orange, CA	2,846,289	3,010,232	163,943	5.8
Kings, NY	2,465,326	2,504,700	39,374	1.6
Miami-Dade, FL	2,253,362	2,496,435	243,073	10.8
Dallas, TX	2,218,899	2,368,139	149,240	6.7
Queens, NY	2,229,379	2,230,722	1,343	0.1
FASTEST-GROWING[1]				
Kendall, IL	54,544	114,736	60,192	110.4
Pinal, AZ	179,727	375,770	196,043	109.1
Flagler, FL	49,832	95,696	45,864	92.0
Lincoln, SD	24,131	44,828	20,697	85.8
Loudoun, VA	169,599	312,311	142,712	84.1
Rockwall, TX	43,080	78,337	35,257	81.8
Forsyth, GA	98,407	175,511	77,104	78.4
Sumter, FL	53,345	93,420	40,075	75.1
Paulding, GA	81,678	142,324	60,646	74.3
Henry, GA	119,341	203,922	84,581	70.9

[1] Among counties with Census 2000 populations of 10,000 or more.
Source: U.S. Census Bureau, 2010 Census and Census 2000.

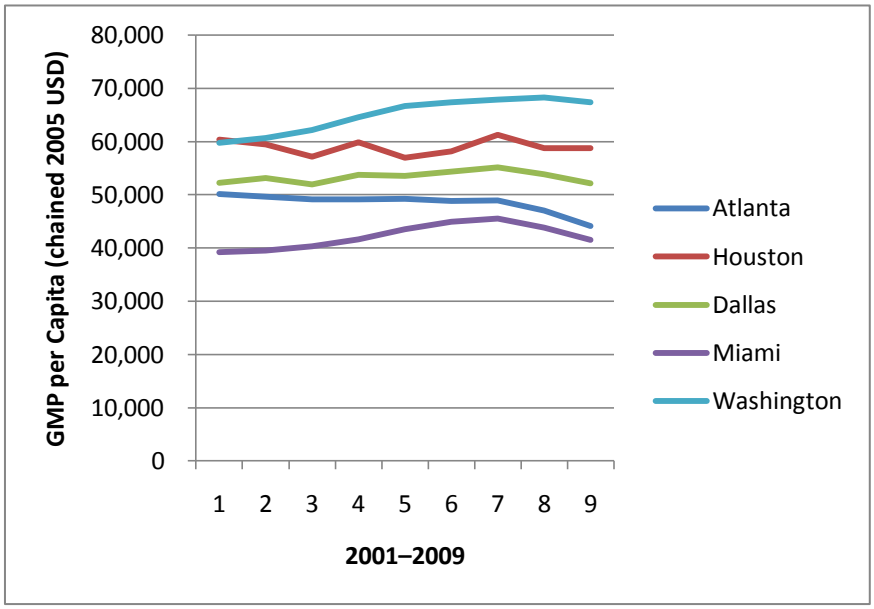
Source: US Census Bureau

According to Zillow data, metro Atlanta's home prices climaxed in 2007. Until 2011 Atlanta's housing lost about a third of its value. In comparison, metro Los Angeles prices peaked about a year before Atlanta's. However, they reached more than three times higher value. While the prices in metro Los Angeles were estimated to decrease also about a third in

value until 2011, the prices remained more than three times higher than those in metro Atlanta, the Zillow.com estimates show. Los Angeles is classified as a metro that suffered from severe housing bubble, while Atlanta not (US Metropolitan Area Population & Migration: 2000−2009, Demographia).

In fact, Demographia's 7th Annual Demographia International Housing Affordability Survey, which features data for 2010, ranked metro Atlanta as the most affordable metropolitan housing market in the United States. Its Median Multiple was at 2.3 compared to 5.9 for Los Angeles metro area. As Glaeser (2010, p. 1) wrote "Atlanta has kept housing prices low, despite a vast increase in its size, because there are few natural or legislative limits to new construction."

Chart 14: Gross Metropolitan Product per Capita, Metros, 2001–2009



Source: Bureau of Economic Analysis

The housing in Houston and Dallas remained also affordable during the recession. What caused the different trajectory? The decisive difference is not in housing market. It is in the lagging Atlanta's job market. Atlanta has been strongly losing jobs during the recession, while the Texas metros continued adding fair numbers of new jobs. Atlanta ended the decade with lower number of jobs than it had in the beginning, while adding more than one million residents. The demographic growth in the Texas metros has been matched with adequate economic growth. It was not so in the case of Atlanta. While Atlanta's affordable housing and an overall image of a boomtown continued to attract large numbers of domestic movers, its

job market did not match this inflow. Unemployment rate in metro Atlanta remained about 10 % in 2011 (Department of Labor). The higher fluctuation of Houston economy (see the chart 14) is likely attributable to the energy sector which makes for an important part of its economy.

Some of the largest Atlanta's employers listed in Fortune 500 are Home Depot (home improvement retailer), UPS (shipping), Coca Cola, Delta Airlines, AT&T Mobility. Atlanta ranks high nationally in number of Fortune 500 company headquarters. CNN is headquartered in the metro. Atlanta boasts one of the busiest airports in the world, which puts the metro high in the metropolitan hierarchy.

Among Dallas-Fort Worth's largest employers are American Airlines (headquarters) and Southwest Airlines, Lockheed Martin (aeronautics, defense), AT&T (major telecommunication provider; headquarters), and Texas Instruments (hi-tech, headquarters). Exxon Mobil, one of the largest oil companies is headquartered in the metro area. The retailer J.C. Penney is also headquartered in the metro.

Houston is the seat of oil giants like ConocoPhillips and Marathon Oil. Sysco, a food distributor, is a major non-oil company. The Port of Houston is one of the most important seaports in the country. Most sources claim Houston and Dallas to have more Fortune 500 companies than Atlanta.

Quoting one of the first reactions to the Census 2010 results from W. Frey (2010, p. 1), demographer of the Brookings Institution, "Texas' relative growth advantage rose since the onset of the recession. As growth rates of Sunbelt high flyers like Florida, Arizona, and Nevada plummeted over the past three years, Texas held its own due to its relative immunity to extreme housing and job market downturns." However, Paul Krugman questions Texas' resistance to the economic crisis in an article (2011) for the New York Times. He also mentions the high Texas budget deficits.

Energy sector is still a vital part of Texas' economy. As the energy sector did well during the decade, it had an alleviating effect on the Texas' economy during the crisis. This same relative Texas' dependency on energy sector caused its economic crisis in the '80s, when the oil prices fell. A part of the Texas crisis was a housing crash, which helped prepare Texas for the next housing crisis with stricter lending regulations.

Krugman in another article (2005) divides the US metros into two geographic groups – the Flatland and the Zoned Zones. The first group, most typically flat regions of the central part of the country, has sufficient space for development. The Zoned Zones on the contrary possess planning regulations reflecting their more dense populations and less developable land. These are typically the eastern and west coasts. In 2005 there were already apparent large out-migrations from the coasts. Glaeser and Gyourko (2003) write about the rise in housing prices related to zoning regulations.

The central part of the country was the least affected by the housing crash and the late 2000s recession. This can be showed on low unemployment rates for metropolitan areas in the central part of the country. Arguably, their natural resources contribute to the economic growth. Oil prices drove growth in economies of metros like Oklahoma City (5 % unemployment rate in 2011 according to the Department of Labor) or Amarillo and Lubbock in the Texas Panhandle region (5 and 6 % respectively, ibid.).

Some (such as Henderson 2008, in his analysis of soaring farmland prices in the Cornbelt region) point at the rising global prices of grains with growing consumption in markets like China or India, and rising consumption of bio-fuels. Metros in the agricultural region of the Great Plains generally fared well during the recession, with under-average unemployment. Minneapolis-Saint Paul (6 %), Bismarck, North Dakota (3 %), Omaha, Nebraska (5 %), Des Moines, Iowa (6 %), Sioux City (5.5 %) are some of the more visible examples (unemployment rates for 2011 from the Department of Labor). Their economies are, though, way more diversified than just relying on their region's primary sector production. Minneapolis-Saint Paul ranks higher in number of Fortune 500 headquarters than it ranks in population count, for example.

Sioux City has been one of the fastest growing small metros in the country. This is rather an exception. Mostly the region does not grow fast demographically, although it seems to be more stable economically.

Coal mining also benefited some places like Casper, Wyoming (6 % unemployment, ibid.). Wyoming is the biggest producer of coal among the US states.

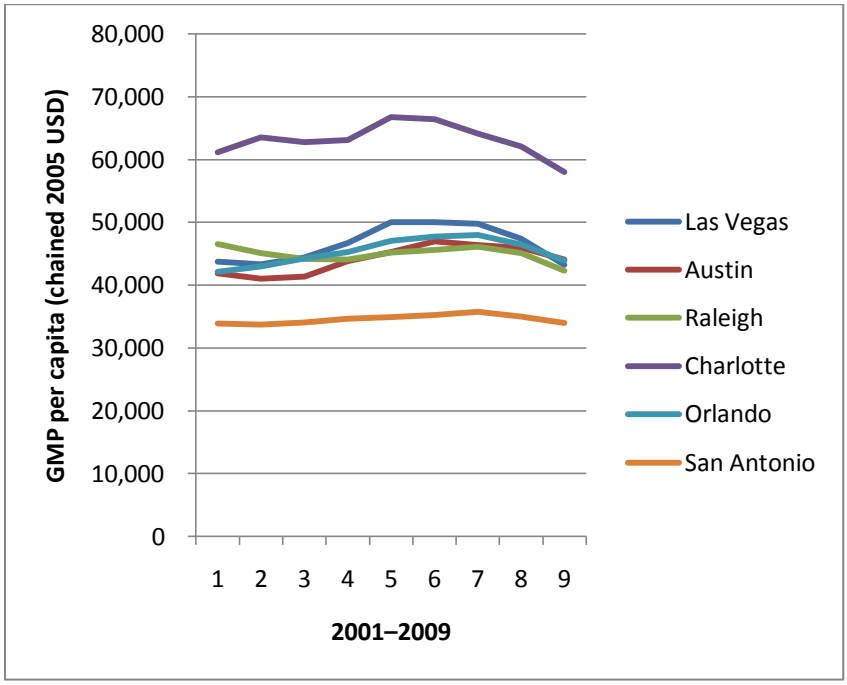
Sufficient land supply helped to avoid a severe housing crisis in the central United States. Land supply is abundant and the region has been more stagnant demographically. There were little problems with covering the housing demand.

The economic performance of the state of Georgia as a whole has not been as bright as it seemed in the beginning of the decade. Global Metro Monitor from December 2010 by Brookings Institution shows that Atlanta was hit particularly hard by the economic recession in comparison with other large metros both in the US and abroad. Only Las Vegas ranked lower.

While Atlanta grew rapidly during the past decade, as A. Renn (2010) notes, Atlanta saw a dramatic decrease in domestic in-migration in the end of the decade with its peers from Texas, Dallas and Houston, recording higher rates. And C. Young (2010, p. 1) writes: "The real estate collapse, along with bad banking principles, has caused Georgia to lead the nation in failed banks."

Phoenix, Riverside, Tampa, Orlando, Atlanta, and Las Vegas were metros with the highest bubble gains during 2004 and 2005 (Frey 2009). Las Vegas and Orlando, the severe housing bubble markets showed, not surprisingly, the highest upsurge and decline in economic activity during the bubble (see the chart 15).

Chart 15: Gross Metropolitan Product per Capita, Metros, 2001–2009



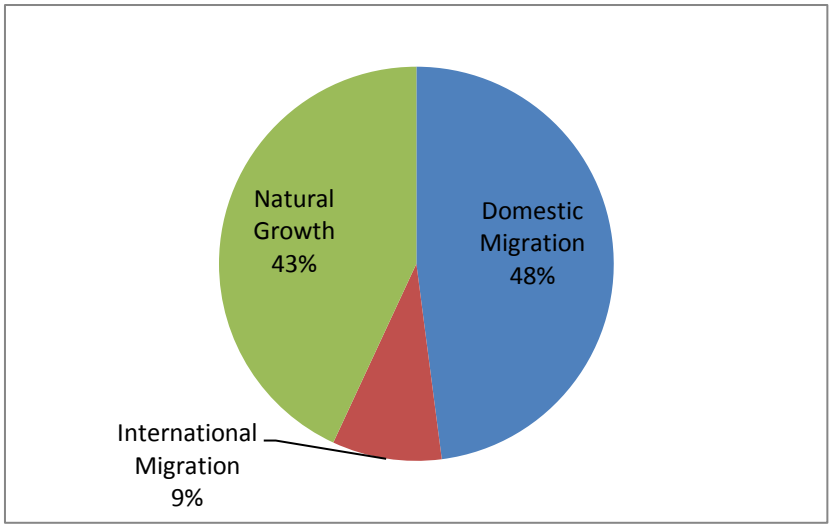
Source: Bureau of Economic Analysis

San Antonio has one of the lowest gross metropolitan products per capita among the researched fastest growing large metros. However, it showed a remarkable job growth during the decade. San Antonio, like other Texas metros did not see a severe housing bubble and its economic production did not fluctuate as much (see the chart 15).

Having a half proportion of Hispanic population, it has a strong natural increase. However, domestic migration contributed the most to the population growth (see the chart 16). Housing remained affordable, without much effect of the crisis. San Antonio has a relatively low share of college graduates, owing this fact to its large Hispanic population, which in average possesses lower education levels.

Manufacturing sector has been booming with companies like Toyota and Boeing having their assembly plants there. This does not place the city well in the national urban hierarchy, though, as manufacturing relocates usually to places with lower wages. The same reasons draw car manufacturers from Germany or Japan to states like Alabama.

Chart 16: Population Growth Composition, Metro San Antonio, 2000–2009



Source: computation on the basis of US Census Bureau data

On the other hand, the energy sector has been doing well. The metro is home to five Fortune 500 companies. This certainly does place the city better in the hierarchy. San Antonio has repeatedly ranked high in economic prospects studies. It has a strong public sector as well, mainly because of an extensive military presence (headquarters of a large part of the army).

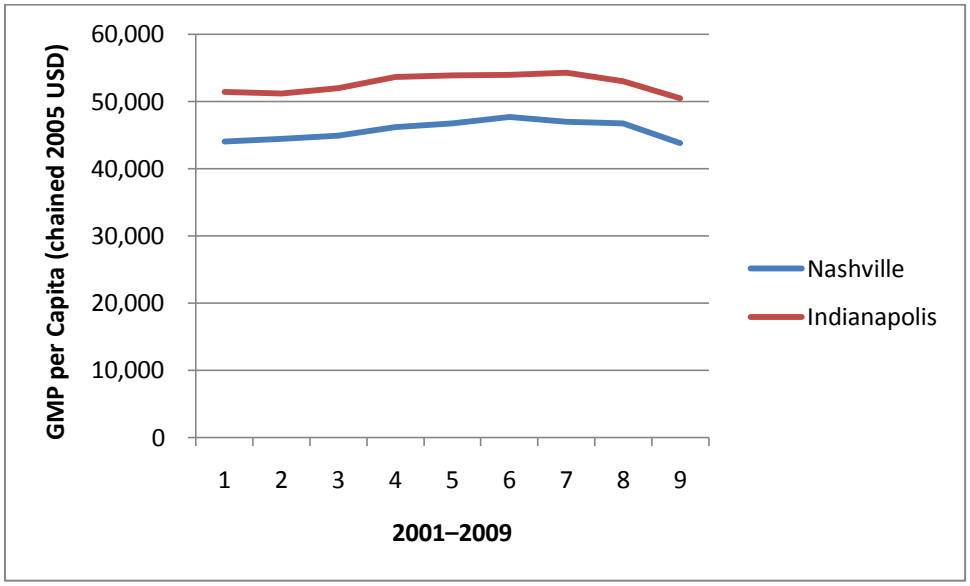
Nashville's population grew by 21 % during the decade (US Census Bureau). This sprawling capital of the country music and the state of Tennessee reached population of 1.6

million. Low costs of doing business and housing combined with attractive cultural scene and natural environment have proved to be draws for migrants from the North.

Nashville's smart growth status has been classified by the Brookings Institution (Puentes et al. 2006, also in Downs 2004) as reformed, growth containment oriented metropolitan area, similar in orientation to Portland, Oregon or Seattle. The urban containment, like in Oregon, is required by the state of Tennessee law. There has been a boom in condominium construction in recent years.

Nashville is a southern city which can count on its climate in attracting its share of higher costs escaping migrants. According to the Brookings Institution's Global Metro Monitor Nashville has been performing well on its way out of the recession. The metro had similar job creation and income growth rate as almost recession-proof Texan metros. Nashville remained among the most affordable metropolitan housing markets in the United States. The metro did not experience a severe housing bubble. However, Nashville's housing market still has the potential to be overvalued and lose more value. The metro's gross metropolitan product has been kept around the US metropolitan average, a sound value for a southern metro (see the chart 17).

Chart 17: Gross Metropolitan Product per Capita, Metros, 2001–2009



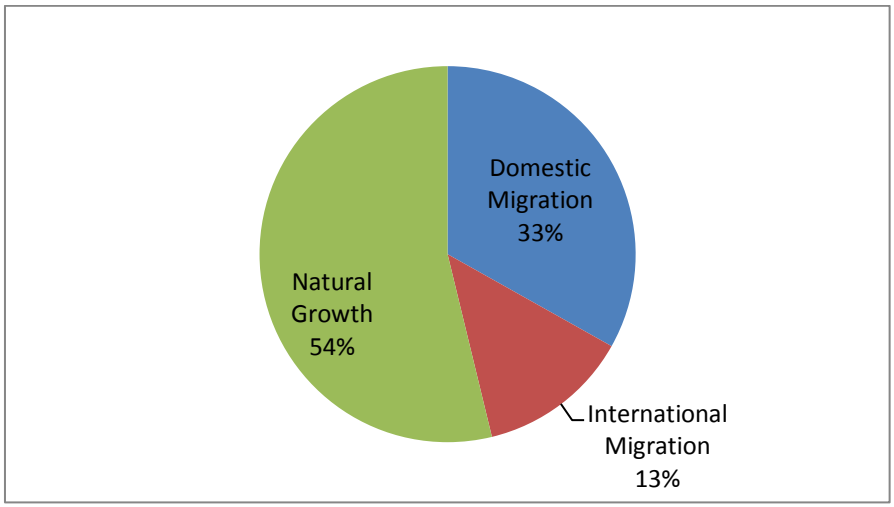
Source: Bureau of Economic Analysis

Among the largest corporate employers in Nashville area figures Nissan (the company relocated its North America headquarters from California in 2006, and owns its largest North American plant in the metro), Hospital Corporation of America (the largest private operator of health care), and Dell.

The ranking by Brookings Metro Monitor 2010 shows that Indianapolis has been one of the worst recession-hit metros in the US. This is quite surprising considering its high population growth and low level of land use regulations. Indianapolis is among the most liberal metros regarding the urban containment policies.

Indianapolis has been the fastest growing Midwest metro of the decade. Indianapolis' 1/3 share of domestic migration on its growth is not among the highest in the nation, though, it is very high for a Rust Belt city (see the chart 18). These results place Indianapolis as a member of the relocation metros category.

Chart 18: Population Growth Composition, Metro Indianapolis, 2000–2009



Source: computation on the basis of US Census Bureau data

There has been a high level of foreclosures (for example DuBow 2006), despite Indianapolis having been one of the most affordable housing markets in the country. It ranked second just to Atlanta in median multiple value in 2010 (7th Annual Demographia International Housing Affordability Survey). A glimpse at median sales price chart by Trulia.com indicates that Indianapolis did not suffer from a severe housing bubble. This has been proven also by the Demographia's classification (US Metropolitan Area Population & Migration: 2000−2009). It did not prevent the metro from undergoing a serious foreclosure

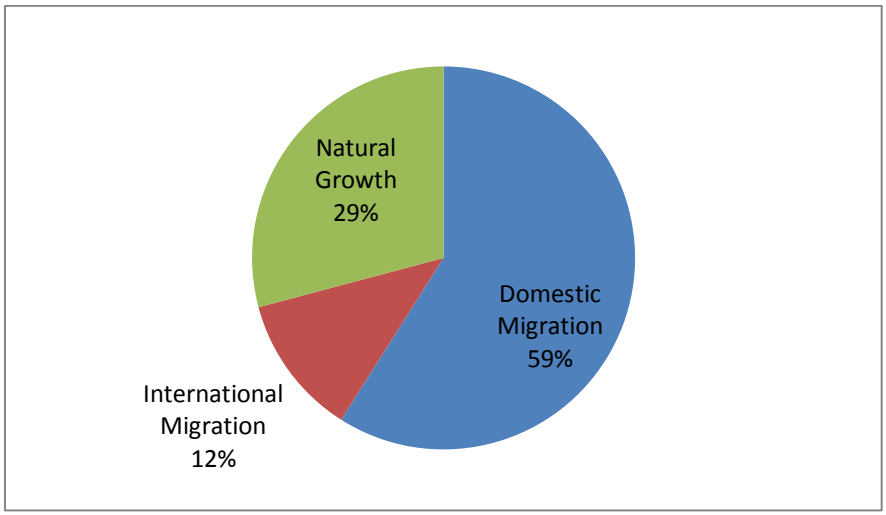
crisis. The foreclosure proliferation has been the result of subprime lending combined with high number of domestic migrants arriving in Indianapolis at the time.

Indianapolis has been heavily shedding jobs and continued to do so even in the recovery years of 2009 and 2010 (Deparment of Labor). As a Midwest metro Indianapolis cannot really compete with southern metros in business costs, although its taxation and utility costs rank well. Like in other old industrial cities in the region its labor is unionized. Even automotive industry cities like Detroit and Toledo have been recovering faster (Metropolitan Monitor). Indianapolis' gross metropolitan product remained high on the northern level (see the chart 17). Major companies based in the city include Eli Lilly (pharmaceuticals) or WellPoint (health insurance). Tourism with the NASCAR car races and conventions is also an important industry.

The drop in GMP per capita in Charlotte is linked not just to the bursting housing bubble (the housing bubble in Charlotte was not severe), but also to the higher dependence on the troubled financial sector. The financial sector was affected by the recession. The economy has not grown as fast as the population. More than a half of the demographic gain came from the strong domestic migration (see the chart 19). This high reliance of the metro's growth on in-migration it clearly places very much among the relocation type of metropolitan areas. Job prospects have undoubtedly driven the in-migration. Pleasant subtropical climate is another attractive aspect of the city shared with most of the fastest growing metros. The metro's population reached 1.7 million in the 2010 Census and the combined statistical area centered on Charlotte had 2.4 million inhabitants.

The financial sector is undeniably a number one draw for Charlotte. The metro is a major banking center. Charlotte is the seat of the Bank of America, one of the largest companies in the United States. The metro had also the headquarters of another large bank Wachovia until 2008 when it was acquired by Wells Fargo as a consequence of the financial crisis. Other Fortune 500 companies headquartered in the metropolitan area include Lowe's (home improvement retail company), Nucor (steel production), Duke Energy (energy generation), or Goodrich (aerospace), among others. The metro's energy sector is among the most important parts of its economy.

Chart 19: Population Growth Composition, Metro Charlotte, 2000–2009



Source: computation on the basis of US Census Bureau data

Charlotte has been one of the greatest gainers of domestic migration in absolute numbers. However, the job creation capacity has not matched the inflow of new workers and the unemployment rate has risen to new levels. The domestic migration has been attracted by the fast growing economy before the recession and relatively affordable housing market.

Although Charlotte's housing market has not ranked among the most affordable, it has still been much cheaper than the not-far-away northeastern metros from where the in-migration has mainly been flowing. Also it has a high income level, which may draw the prices up. According to Zillow.com data metro Charlotte's housing market has been relatively stable through the recession.

Business relocations were attracted by relatively lower operating costs. The gross metropolitan product remained significantly higher than in other fast growing metros of the South, reflecting the presence of high income industries such as financial sector.

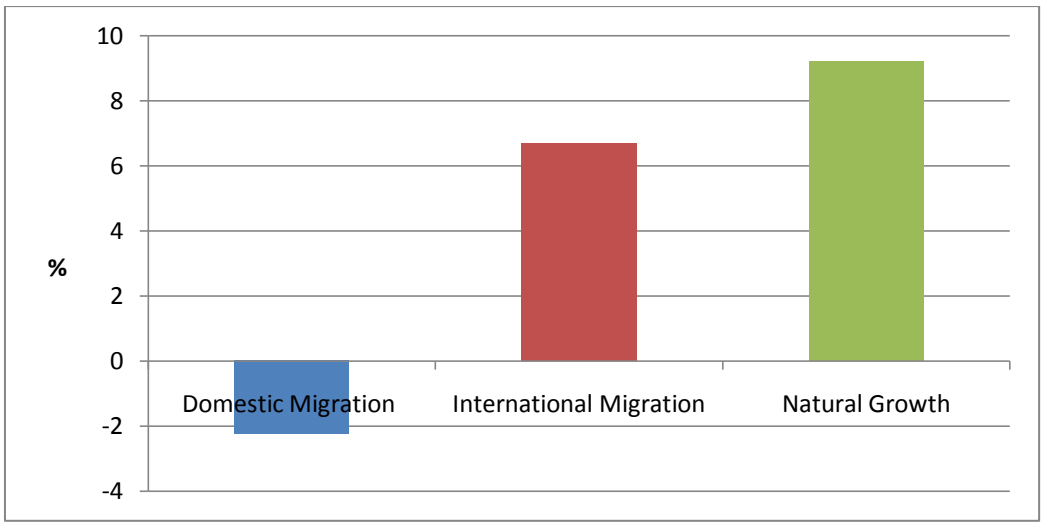
Metro Washington made it through the crisis relatively untouched compared to other metros mainly because of its virtually booming public sector (the federal administration complex) and private contractors connected to it. Despite the relatively unscathed economy, domestic migrants have been leaving metro Washington (see the chart 20). The metropolitan area recorded net domestic in-migration just in 2001 and 2009 (Demographia US Metropolitan Area Population & Migration: 2000−2009). Its maximal out-migration (2006) corresponded to the height of the housing bubble (ibid.). Washington suffered from severe

housing bubble. In 2010 it was classified as moderately unaffordable market (7th Annual Demographia International Housing Affordability Survey).

The composition of Washington's demographic growth is much more similar to the largest metros of the country than to the southern boomtowns. Washington has a smart growth policy and elevated housing prices. The housing bust has not been as pronounced as elsewhere and properties did not lose their price so much in the metro Washington.

Another part of the population growth equation is natural growth. It differentiates significantly between the metros. A mere glimpse at the statistics shows how much. In the table 9 one can see the range of natural growth differentiation between the largest metros in the country. There are ranked the ten highest and ten lowest natural growth performers.

Chart 20: Population Growth Composition, Metro Washington, 2000–2009



Source: computation on the basis of US Census Bureau data

Salt Lake City is no surprise at the highest place considering its LDS (Mormon) population base and growing Hispanic community, both pro-children oriented communities.

Although Salt Lake City has been a destination of many IT investments from the Silicon Valley, seeking lower costs, the dominance of information technology sector has not been as strong as in the case of Austin and Raleigh. Moreover, the industry is more centered on the metro Provo, south of the metro Salt Lake City.

The metro SLC did not suffer from severe housing bubble. Salt Lake City had a moderately unaffordable market as of 2010. Although metro Salt Lake City lost population by domestic migration, if we looked at the wider urban region data, we would learn that this loss (see the chart 21) went to large extent to metros adjacent to Salt Lake City, like Ogden and

Table 9: Natural Growth in Metros with More than One Million Inhabitants (10 Highest and 10 Lowest Performers) between 2000 and 2009

MSA	%
Salt Lake City, UT	14
Austin-Round Rock, TX	13
Dallas-Fort Worth-Arlington, TX	12
Houston-Sugar Land-Baytown, TX	12
Raleigh-Cary, NC	11
Phoenix-Mesa-Scottsdale, AZ	11
Atlanta-Sandy Springs-Marietta, GA	11
Riverside-San Bernardino-Ontario, CA	10
San Jose-Sunnyvale-Santa Clara, CA	10
Denver-Aurora-Broomfield, CO	10
St. Louis, MO-IL	4
New Orleans-Metairie-Kenner, LA	4
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	4
Birmingham-Hoover, AL	4
Hartford-West Hartford-East Hartford, CT	3
Providence-New Bedford-Fall River, RI-MA	3
Cleveland-Elyria-Mentor, OH	2
Tampa-St. Petersburg-Clearwater, FL	1
Buffalo-Niagara Falls, NY	1
Pittsburgh, PA	-1

Source: excerpt from Demographia US Metropolitan Area Population & Migration: 2000−2009

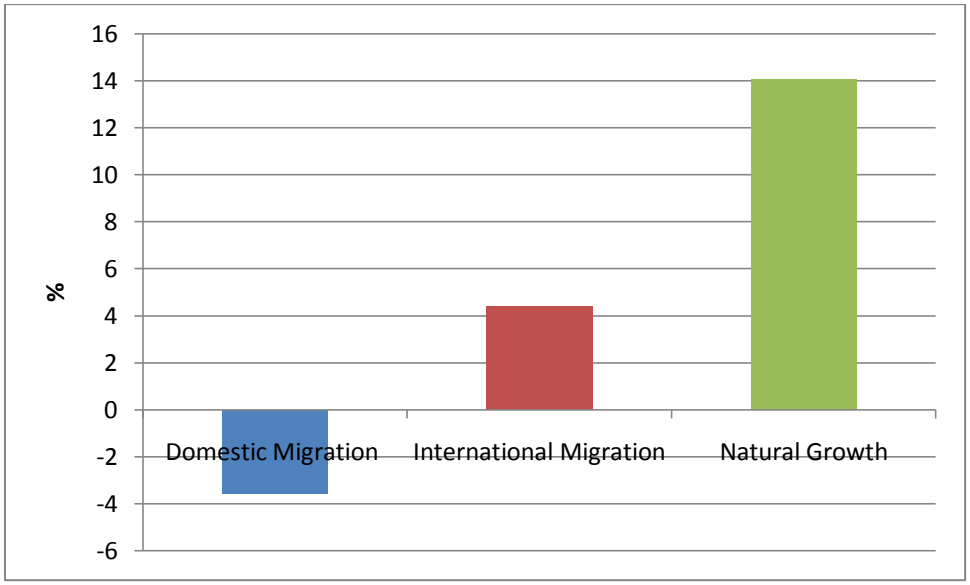
Provo. These metros function more like suburbs of Salt Lake City, a fact that skews the migration data. People from Salt Lake City move to Provo and Ogden, because metropolitan Salt Lake City does not have much space to expand. It is bordered by landforms of the Wasatch Range to the east and the Salt Lake Basin to the west. Salt Lake City, Ogden and Provo form more or less a contiguous urban space.

Salt Lake City had positive net migration with coastal California, at least between 1994 and 2005 (Pinkerton 2007). The fast growing metros, Provo and Ogden, have been

gaining domestic migration from coastal California. Median home sales price in Salt Lake City in 2011 was about 140 thousand dollars (Trulia).

Salt Lake City is the only Western metro that scored low in comprehensive urban planning (Puentes et al. 2006). It also scores low in infrastructure regulations such as impact fees. On the other hand Salt Lake City is open to high density development. The city has a large share of college graduates living in the central area. The metro has larger Hispanic population (16 %, 2009, State of the Metropolitan America, Interactive Map) more concentrated to certain neighborhoods, and very low proportion of African-Americans.

Chart 21: Population Growth Composition, Metro Salt Lake City, 2000–2009



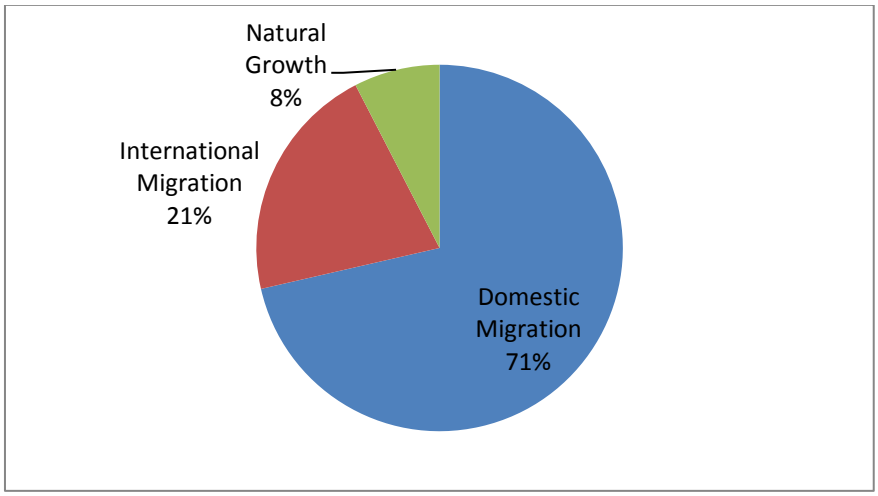
Source: computation on the basis of US Census Bureau data

There is also one metro among the ten fastest growing in natural increase which does not figure among the twenty fastest growing metros. San Jose with its base of families and one of the most multicultural mixes of international migrants recorded 10 % natural increase (table 9).

Like other expensive Californian coastal metros San Jose has been losing heavily in domestic migration. So heavily that it was higher than its decent international migration gains and one of the highest natural increases among large metros. The result was a 6 % population growth (Demographia US Metropolitan Area Population & Migration: 2000−2009).

Quite surprising is Tampa metropolitan area's ranking among the lowest natural increase performing metros in the United States, with natural increase just 1 % (table 9). This fact, which is hard to believe, is probably attributable to its retiree population. However, Tampa's 17 % of seniors (2009, State of the Metropolitan America, Interactive Map) is not an extremely high proportion. This low natural increase is exceptional even among Florida's metros that are a destination of northern retirees, and especially among the fastest growing US metros. This data makes Tampa a metro most relying on domestic migration for population growth among the metros analyzed in this thesis (see the chart 22 below, and note the high share of domestic migration on Tampa's population growth). Tampa has 15 % of Hispanics which also makes a negative natural increase improbable (2009, ibid.).

Chart 22: Population Growth Composition, Metro Tampa, 2000–2009



Source: computation on the basis of US Census Bureau data

Austin has repeatedly ranked at top places in studies on job opportunities and life quality. It has a combination of sought-after professional jobs (as those in the IT sector), housing affordability, advantages of lower density (less traffic congestion) and smaller metro area. Agreeable cultural and natural environment and climate also do their part.

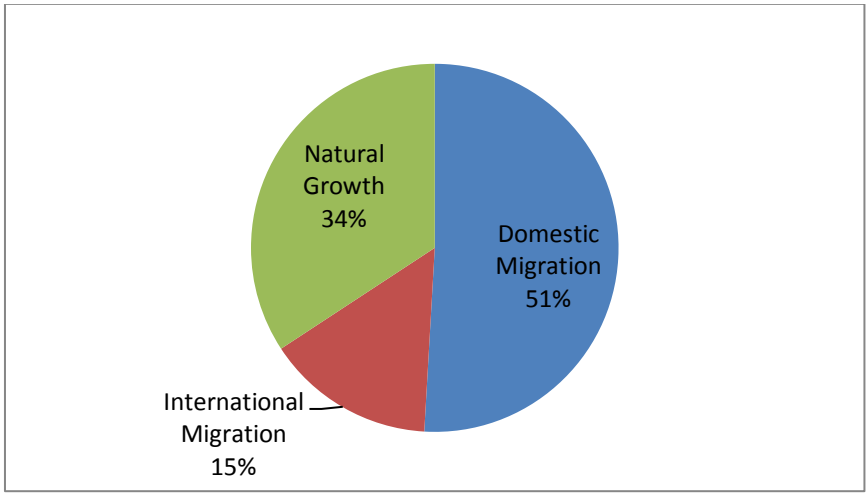
Austin ranked third in population growth in the decade. It had high domestic in-migration and natural growth second just to Salt Lake City. Strong domestic migration gains contributed half of the population growth (see the chart 23).

The high technology companies like Dell, IBM, or Texas Instruments have been present in the metro mostly from the 90's. These employers in combination with the favorable

climate and rich cultural scene, managed to attract large numbers of young professionals. The presence of a high-ranking university was also an important condition for the city's progress, contributing to one of the highest proportions of tertiary graduates among the large metros.

Both the university and the relatively high employment in government jobs (Austin is the capital of Texas) contributed to lower impact of the crisis on the metro's economy. In fact, Brookings Institution's Metro Monitor ranked Austin as the best performing large metropolitan economy in the United States after the peak of the crisis. Austin also benefited from its position in Texas, a state which experienced its own housing crisis between 80's and 90's leaving the state banking regulation better prepared for the subprime lending crisis. After all, the metro's comparatively good performance through the crisis was the result of a unique co-incidence of beneficial factors.

Chart 23: Population Growth Composition, Metro Austin, 2000–2009



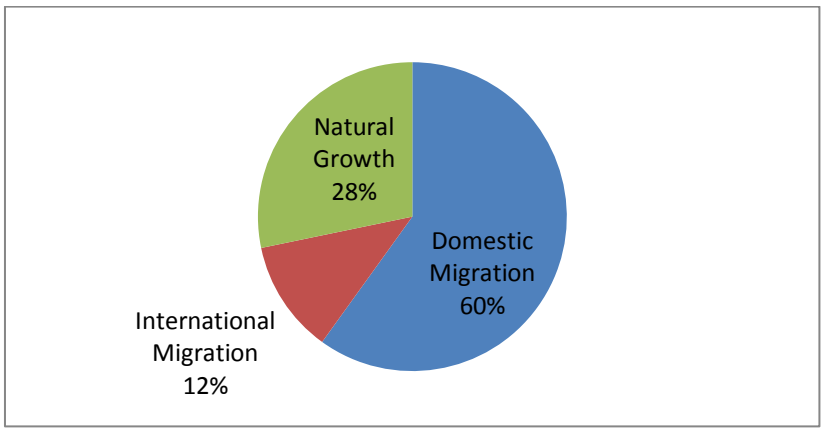
Source: computation on the basis of US Census Bureau data

The migration data of IRS from fiscal year 2004–2005 show large metros like Los Angeles and Chicago have been sources of domestic migration to Austin. However this result may be skewed by the fact that these metros have large counties which ranks them disproportionately higher. The strength of the domestic migration to Austin is also apparent from the surprisingly low ratio of international migrants in Austin's growth equation, considering it is a fast growing economy with strong homebuilding activity close to Mexico. Austin had positive migration balance with Houston and Dallas as well.

What are the housing regulations and urban planning in Austin like? Since the '90s there have been tendencies towards the smart growth policy, most apparent in subsidies for downtown projects matching certain smart growth criteria (Barna 2002, Lewis 2007). Nevertheless, Austin still ranks like other Texas metros among the most sprawled cities in the country.

Raleigh, the capital of North Carolina, has also been attracting both young domestic and international migrants. In Raleigh, hi-tech industries-based development such as the Research Triangle (Raleigh-Durham-Chapel Hill CSA) and universities generate educated workforce and draw young professionals seeking both well-paid jobs and affordable housing. Shorter commuting times can also be a factor in decisions on where to reside. This is something the smaller metros with developed infrastructure like Raleigh or Austin can offer. During the decade Raleigh grew fast because of high domestic in-migration (see the chart 24).

Chart 24: Population Growth Composition, Metro Raleigh, 2000–2009



Source: computation on the basis of US Census Bureau data

Median home sale price was stable with movement between 170 and 200 thousand in the last 5 years for the *city* of Raleigh (Zillow). The Association of Realtors shows prices around 220 thousand in the last 3 years for the *metro* Raleigh, higher than 190 thousand for metro Austin, Texas, and neighboring Charlotte which moved around 190 to 200 thousand. Raleigh is moderately unaffordable housing market according to median multiple classification (7th Annual Demographia International Housing Affordability Survey). According to Zillow, the Wake County's (metro Raleigh) home prices peaked in 2008 at around 220 thousand and in 2011 are at 190 thousand.

Lately, there have been new tendencies towards smart growth in Raleigh. In 2002 the Smart Growth America (Ewing et al. 2002) ranked Raleigh as one of the most sprawling metros and it continued to grow fast.

Frey (2010) notes, that for the first time since statehood, California did not gain any seats in the congressional elections, while Nevada, Arizona, Utah and Washington each gained one. He argues that if the mid-decade bubble-induced migration from California to these more affordable neighbors had continued, the Golden State might have lost a seat. California's growth potential seems to be exhausted, at least for now.

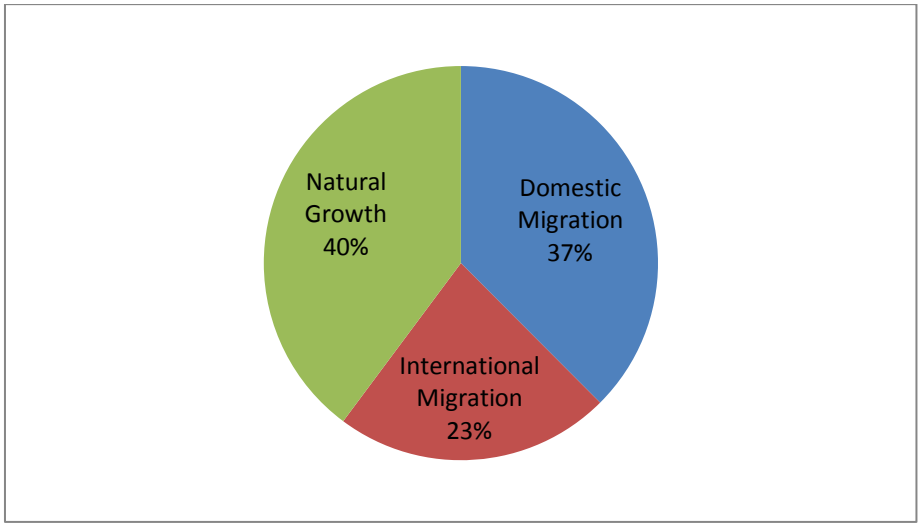
During the bubble years, the prices of housing in California were swelling. People have been moving out of the state both because of the soaring real estate prices and jobs being created in other states with more business-friendly institutional environment. Many of the Silicon Valley's hi-tech companies have been expanding outside the state, largely to more business-friendly and affordable places like the Research Triangle region of North Carolina (Raleigh and Durham combined statistical area) or Austin. W. Cox (2010) shows the links between housing affordability and land use regulation. The California's new governor Brown's policy is oriented towards higher density development which can further affect the prices of housing.

Probably the best known metro with a restrained development in the US is Portland, Oregon, with its urban growth boundary. In Portland, planning authorities reserve the area inside of the boundary for higher density housing, increasing the home prices relative to median income (Cox 2010a). The data by Demographia's "Portland: Urban Growth Boundary Keeps Out Growth" report also show that most of the domestic migrants find home outside the growth boundary in low density suburbia. This makes a very distinctive pattern of urban growth in the two zones of the metropolitan area. The containment policy is required by the state of Oregon legislation. Despite the restrictions Portland was one of the fastest growing metros of the decade. The metro population grew by 15 % (US Census Bureau).

Portland has a smart growth policy, but still is among the fastest growing metros. This is in part because people from also regulated, but more expensive California, were choosing Portland as a place to move to for comparatively lower price housing in case they were able to find an adequate employment there. The county-to-county migration statistics support this

finding. Metro Portland has also been keeping high gains in natural increase of population (see the chart 25).

Chart 25: Population Growth Composition, Metro Portland, 2000–2009



Source: computation on the basis of US Census Bureau data

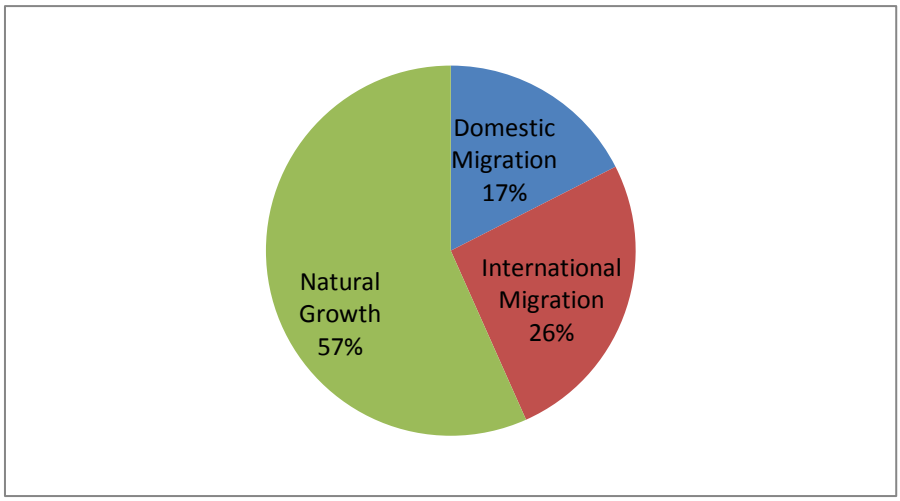
The metros with restrained growth policy have experienced much more severe housing bubbles than areas with less housing regulations. Subprime lending heightened the available credit, increasing housing demand, and thus contributing to the inflation.

According to W. Cox (2010), Phoenix and Las Vegas' limits for housing are of different character. The land is owned by the state or the federal government but the effects on the property values are similar as in the case of Portland building limits. Planning authorities in Portland limit the area for housing, increasing the home prices relative to incomes (so-called *median multiple*). The study by Brookings Institution (Puentes et al. 2006) shows that Phoenix has a similar smart growth policy as Southern California. In Las Vegas, as was already mentioned, some jurisdictions use building caps on number of new housing units.

After the strong '90s Denver recorded a decade of weaker growth, like most of the US metropolitan space. While the city remained relatively attractive to international migrants, domestic migration to Denver has dwindled. The metro relied largely on natural increase for its fast growth (see the chart 26), benefitting from being a destination for younger domestic migrants, especially in the '90s. Denver's economy as measured by gross metropolitan product per capita avoided large fluctuations during the decade. It might well be the most

stable economy, at least for the decade, among the analyzed metros. Denver's last larger economic crisis occurred in the '80s with the decline in oil prices, when the metro was even losing by domestic migration. Texas naturally suffered from the same crisis. Since then Denver's economy has diversified and has become less sensitive to the development of oil prices.

Chart 26: Population Growth Composition, Metro Denver, 2000–2009



Source: computation on the basis of US Census Bureau data

Denver's housing is not among the cheapest. The 7th Annual Demographia International Housing Affordability Survey classifies metro Denver's housing market as moderately unaffordable. The metro uses reformed growth control similar in character to the Bay Area's smart growth policy according to the Brookings Institution's classification (Puentes et al. 2006). The regional council implements an urban containment strategy. "Demographia US Metropolitan Area Population & Migration: 2000−2009" report classified Denver as a metro housing market which suffered from a severe price bubble.

Denver possesses high level of human capital as it has 37 % of bachelor's degree attainment (2009, State of the Metropolitan America, Interactive Map). The major migration sources for its in-migration are California, Texas, Arizona, Florida, New Mexico, and Illinois (Metro Denver data). Denver has been successful in attracting educated migrants. The metro offers well-paid jobs in combination with lower costs. Its natural environment also attracts many with its high count of sunny days and Rocky Mountains above. The metro presents itself as a place for active, sporty people, also with large array of spectator sports available.

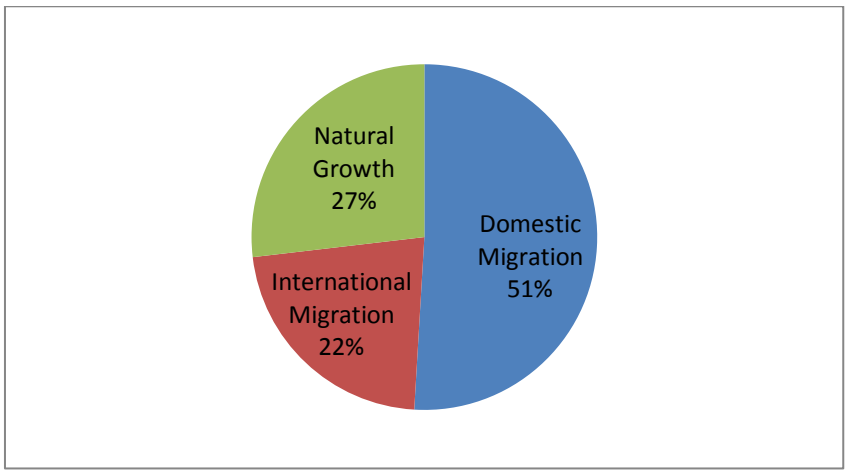
This helps in attracting young professionals. The region possesses universities like the University of Colorado at Boulder, producing a qualified workforce.

Denver's strong international migration has mostly been coming from Mexico. There are major concentrations of Hispanics (22 % of the metro, 2009, State of the Metropolitan America, Interactive Map) in certain neighborhoods especially western inner suburbs and eastern suburbs (my analysis of "Mapping America: Every City, Every Block" by the New York Times). Blacks (5 %, 2009) are more dispersed than is usual in American metros, but most of them reside east of the downtown. Their lower proportion corresponds with Denver's position in the West region. Denver's downtown is highly gentrified with high percentage of white population.

Orlando like all other Florida's metros uses reformed growth management policy, similar in character to Southern California's metros and Phoenix. In 2008 and 2009 metro Orlando began to lose people by domestic migration (Demographia US Metropolitan Area Population & Migration: 2000−2009), which is a setback from its pre-recession large in-migration gains. It is an indication how hard the metro got hit by the housing crisis. Domestic migration even with the two years of losses still accounted for a half of the metro's growth in the decade (see the chart 27).

Orlando, apart from its tourism industry with the Disney World amusement park and conventions, has been expanding its hi-tech industries and manufacturing. Aerospace and software are important industries. Film studios and entertainment are also important parts of the economy.

Chart 27: Population Growth Composition, Metro Orlando, 2000–2009



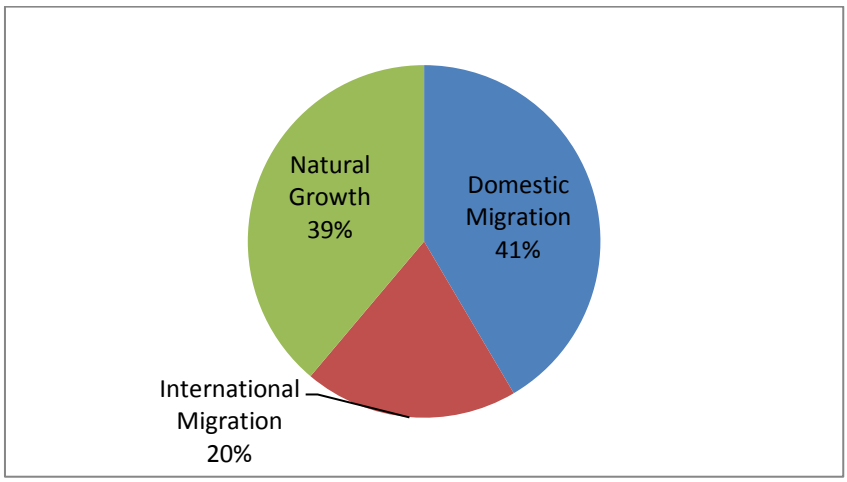
Source: computation on the basis of US Census Bureau data

Median home sale price peaked in 2007 around 260 thousand dollars, and since then fell to around 120 thousand in 2011 (Zillow). That is indeed a severe bubble burst. Orlando functioned as a "Safety Valve" market. The largest market in Florida, Miami, is not much higher in prices, so the effect of "Safety Valve" likely was not large. Larger "Safety Valve" effect would be expectable from the north.

Sacramento, the California's capital, has continued to receive thousands of movers from the proximate Bay Area as it did throughout the nineties. Sacramento had strong net in-migration from 2001 to 2004, then it somewhat cooled off adding just a few thousand migrants. The domestic migration remained a prominent part of Sacramento's growth equation (see the chart 28).

The expensive Bay Area metros, San Francisco and San Jose (Silicon Valley), have been losing people through domestic out-migration motivated mostly by lower housing prices and better job prospects. Median home sale price in 2010 was 602 thousand for San Jose and 525 thousand dollars for San Francisco (data of National Association of Realtors). It was just 184 thousand in Sacramento. This huge price difference still has potential for relocation. However, this potential has to be matched with an adequate rate of job creation. According to Zillow's data, metro Sacramento's median sale price was around 210 thousand in 2011, down from 410 thousand in 2005. Sacramento has lower median income, more space for development and the metro is less attractive for living than the Bay Area. The state of California is the biggest employer in the capital of California. Semiconductors producer Intel is among the largest corporate employers.

Chart 28: Population Growth Composition, Metro Sacramento, 2000–2009



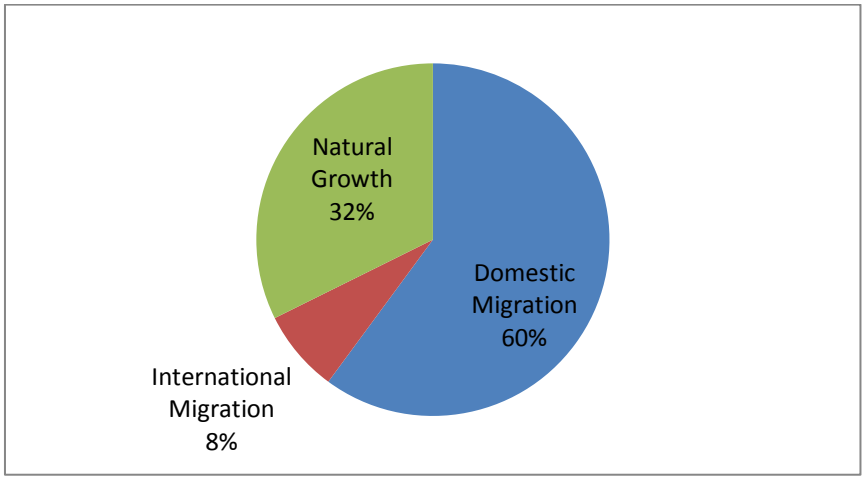
Source: computation on the basis of US Census Bureau data

Job creation has not been a strong point of the Bay Area, even after successfully overcoming the dot.com bust of the Silicon Valley at the turn of the decade. Giants like Apple, Google, HP, Intel, Adobe Systems or the recent success of Facebook have not recovered the job market that has actually been losing jobs to more business friendly, cheaper locations. Facebook's first expansion out of California actually led to Austin, Texas, one of the metros favored by hi-tech companies relocating their operations.

High proportion of young families contributed to Sacramento's decent natural increase. The metro is ethnically diverse, especially its southern and northern suburbs, with Hispanic (19 %), Asian (11 %) and African-American (7 %) population (2009, State of the Metropolitan America, Interactive Map). Northeastern suburbs have largely white population.

Metro Jacksonville has relied heavily on domestic migration for its high population growth (see the chart 29). The domestic in-migration has declined sharply following the burst of the price bubble. The presence of government spending in form of naval and other military installments has helped bolster somewhat local economy during the crisis. The metro's gross metropolitan product per capita rose robustly between 2007 and 2009. That is a rare performance, as most metros were plunging into the crisis.

Chart 29: Population Growth Composition, Metro Jacksonville, 2000–2009

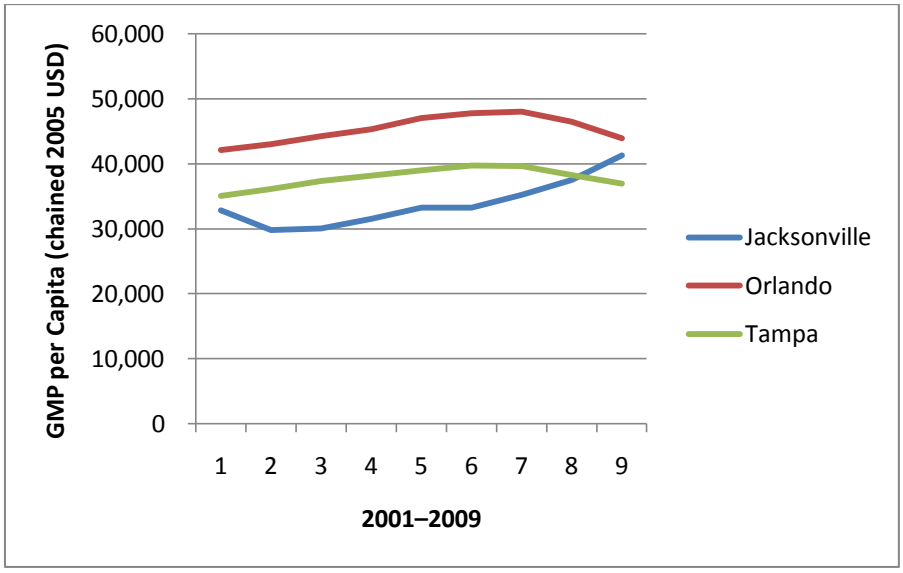


Source: computation on the basis of US Census Bureau data

Jacksonville has as all of Florida's metros a reformed growth management (Puentes et al. 2006). Its housing market did not see a severe housing bubble (Demographia US Metropolitan Area Population & Migration: 2000−2009) and remained affordable in 2010. The median sale price culminated around 210 thousand dollars in 2007 (Zillow), but the price

did not fall as much as in other Florida's fast growing metros. The price in 2011 was around 155 thousand (ibid.), reflecting Jacksonville's growing economy (see the chart 30).

Chart 30: GMP per capita, Metro Jacksonville, Orlando and Tampa, 2001–2009



Source: US Department of Commerce: Bureau of Economic Analysis

While there is a regular pattern of gross metropolitan product growth during the formation of the bubble for Orlando and Tampa, there is a difference in the trajectory of Jacksonville's GMP likely attributable to federal government's spending on defense (see the chart 30).

Appendix 1

Table 10: Metros with population over 1 million with the highest GDP per capita 2001−2009 (in chained 2005 USD)

Metropolitan Area	2001	2002	2003	2004	2005	2006	2007	2008	2009
San Jose	67,299	63,932	65,036	70,135	74,596	78,915	83,715	84,089	79,604
San Francisco	63,260	62,931	63,857	65,999	69,119	70,676	71,535	72,512	72,259
Washington	59,801	60,687	62,135	64,590	66,692	67,367	67,859	68,319	67,344
Seattle	55,905	55,434	55,761	56,419	58,257	60,275	63,411	63,722	61,282
Hartford	56,095	53,704	53,322	56,812	57,652	60,195	63,532	61,981	60,374
Boston	56,739	56,299	56,936	58,388	59,195	60,137	61,168	61,071	59,375
Houston	60,317	59,409	57,162	59,814	56,913	58,146	61,249	58,795	58,754
Charlotte	61,165	63,565	62,737	63,134	66,749	66,422	64,101	62,103	58,029
New York	54,637	53,985	53,823	55,090	57,173	59,502	60,509	60,042	57,338
Denver	55,186	55,327	54,822	55,226	56,510	57,060	57,035	56,900	55,957
Madison	49,840	50,947	51,524	53,275	54,770	55,478	56,525	56,114	55,612
New Orleans	49,100	48,953	50,681	52,576	51,994	63,702	54,573	50,481	53,835
Minneapolis	52,572	52,788	54,055	55,830	56,406	55,832	55,727	55,222	52,974
Salt Lake City	48,693	47,826	47,076	47,575	49,735	51,643	53,789	53,434	52,733
Los Angeles	46,147	46,723	47,820	50,065	51,848	54,021	54,673	54,471	52,158
Dallas	52,210	53,108	51,948	53,775	53,590	54,387	55,182	53,808	52,100
San Diego	44,252	46,036	47,396	49,700	51,524	52,568	52,929	52,905	51,035
Philadelphia	46,765	47,856	49,212	49,896	50,378	51,009	51,760	51,579	50,889
Portland	41,256	41,617	42,140	45,841	46,872	51,612	53,100	53,304	50,863
Indianapolis	51,452	51,229	51,956	53,614	53,900	53,982	54,257	53,019	50,471

Source: US Department of Commerce: Bureau of Economic Analysis

Table 11: Total GDP Estimates for Metros (millions of chained 2005 USD)

Metropolitan Area	2001	2002	2003	2004	2005	2006	2007	2008	2009
U.S. Metropolitan Portion	10,190,935	10,367,348	10,582,308	10,956,280	11,278,656	11,600,878	11,836,487	11,789,658	11,504,593
New York	1,010,235	1,003,589	1,004,947	1,032,796	1,074,737	1,120,164	1,143,685	1,138,904	1,093,418
Los Angeles	578,029	590,340	608,147	639,054	661,635	686,810	693,944	695,513	671,520
Chicago	446,811	448,491	453,968	466,590	471,672	481,952	490,474	481,561	459,612
Washington	294,656	304,317	316,043	333,191	348,752	354,687	360,536	367,414	368,793
Houston	292,607	295,774	290,615	310,460	301,613	318,922	342,852	336,700	344,741
Dallas	279,563	290,851	289,977	305,980	311,700	326,287	339,738	339,047	335,918
San Francisco	264,402	262,150	265,207	273,469	286,817	294,210	300,605	308,917	312,003
Philadelphia	267,615	275,454	284,828	290,541	294,741	299,981	306,043	306,404	303,719
Boston	252,111	251,038	253,832	260,206	263,945	269,021	275,497	277,548	272,452
Atlanta	222,269	226,189	229,823	236,050	243,691	250,230	257,578	253,202	241,590
Miami	201,021	205,973	213,056	223,360	237,147	245,877	248,601	241,032	230,213
Seattle	172,991	173,060	175,032	178,492	186,561	196,495	209,724	213,892	208,839
Phoenix	138,780	142,852	150,486	156,687	168,890	181,763	186,128	183,224	174,617
Minneapolis	158,983	161,178	166,395	173,438	176,706	176,857	178,561	178,787	173,215
Detroit	196,201	199,569	202,581	199,130	200,644	194,192	194,910	186,285	169,518
San Diego	126,875	133,562	138,721	145,903	151,571	154,930	157,499	159,733	155,850
San Jose	117,447	110,490	112,067	120,919	129,597	138,461	148,881	152,255	146,448
Denver	122,731	125,938	125,951	128,219	132,997	136,923	139,706	142,271	142,813
Baltimore	109,839	112,229	114,175	118,646	121,610	124,002	125,665	126,091	124,636

Source: US Department of Commerce: Bureau of Economic Analysis

2.2 The Developmental Typology of the Fastest Growing Portion of the Metropolitan USA

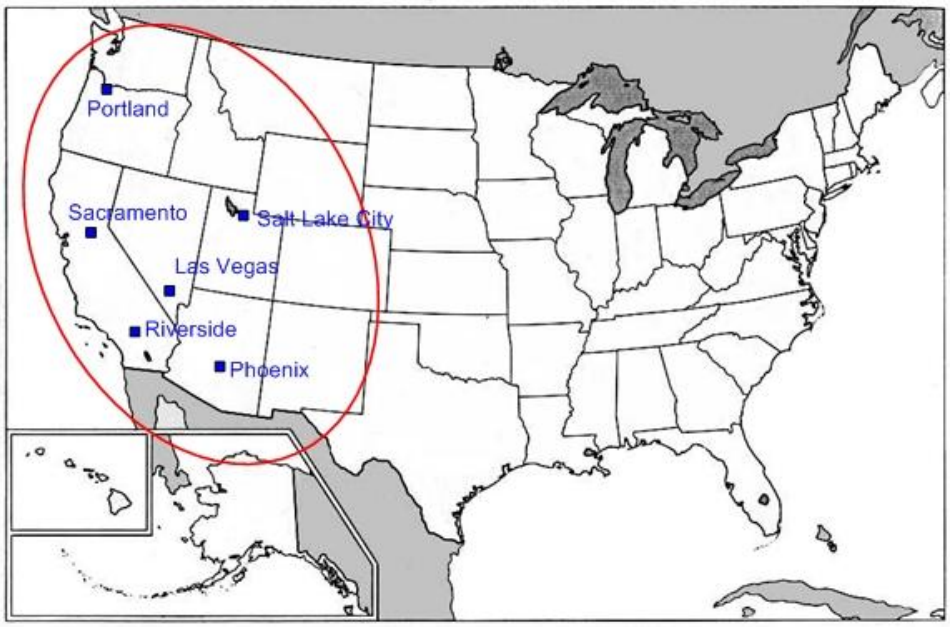
In this main section the research is going to classify the metropolitan areas according to their preceding analysis of classifiers results. The goal is to create a developmental typology of the fastest growing large metros. This is not just to understand how well have distinct developmental types of the metros fared during the crisis and after it during the recovery period, but also to assess what are their prospects for the upcoming years. The developmental typology shows different models of development. Which of the models is getting most successfully out of the recession?

2.2.1 California's Relocation Metros

These metros (see the map 4) have been receiving people escaping expensive coastal California. This migratory flow has represented a major contribution to their growth. California has become expensive both for people and companies. Its regulations have had a negative impact on the economy. Smart growth regulations contributed to housing price escalation and creation of some of the least affordable housing markets in the United States. Costs of doing business in California have soared. Environmental regulations abound as the green lobby is particularly strong in this state. State employees unions' lobby is also influential, contributing to heavy spending of the Golden State. The state suffered from a budget crisis in the end of the decade. California remains heavily indebted with large budget deficits. Environmentally conscious local governments enhanced with statewide green regulations drive pollutants, manufacturers and connected blue collar jobs out of the state. CO^2 regulation related to global warming initiative is also in place.

While all these environmental and smart growth regulations make California a progressive and technologically advanced state, they also make California less competitive. This does not except the leading California-based hi-tech and information technology companies that have also been expanding out of the state in more business-friendly states.

Map 4: California's Relocation Metros



Map by author, using a blank map from nationmaster.com

The rich coastal metros contrast with places with high unemployment and lower per capita incomes in the interior, particularly the agricultural Central Valley. These interior metros also have lower education attainment levels. California's agricultural sector dependent on irrigation still has national importance.

Some of the places in the interior, though, figure on the list of the fastest growing metros. Riverside-San Bernardino-Ontario metropolitan area is one of them. It is an eastern expansion or suburb of the metro Los Angeles. This is recognized by the US Census Bureau as metro Los Angeles and Riverside form the combined statistical area of Los Angeles-Long Beach-Riverside.

Offering cheaper land, Riverside-San Bernardino has become a relocation destination for hundreds of thousands of southern Californians moving not just from Los Angeles, but especially in its southern part also from San Diego.

The Bay Area's corresponding migration vent takes form of the inland state capital. Sacramento is not as close to the Bay Area as is Riverside to Los Angeles, nor it forms a combined statistical area with the main source of its relocation new-comers (San Francisco and San Jose).

The main connection between the California's Relocation Metros is the fact that a major, and often dominant part of their population gains has been realized through the migration from the coastal California metros. These metros have all had relatively high natural increase and international migration gains as well. Their domestic migration gains were linked to the housing bubble and business location decisions. The business relocations were mostly also motivated by costs.

The majority of the California's Relocation Metros has been classified as "Safety Valve" metropolitan areas by the Demographia analysis (US Metropolitan Area Population & Migration: 2000−2009) because domestic migrants escaping overheated housing market in the coastal California were flocking to these "Safety Valve" metros in search of more affordable housing. This process contributed to unprecedented inflation, or bubble in the "Safety Valve" metros as well. When the bubble burst, so did the California's Relocation Metros' in-migration. The sudden end of massive in-migration is a common sign of the bubble markets. There are more metros that have relocation character. However, those do not share the same predominant origin of the relocation participants, and have been collocated to other two groups of relocation metros identified by me.

The California's Relocation Metros generally have not shown a fast recovery with often negative changes in employment even during the recovery period, and low improvement in incomes. This development may signal a challenge for the whole region. California after decades of strong migratory growth attracted by strong economic performance has become a net loser of domestic migration. After the strong relocation of many mid-class Californians to the neighboring states which has virtually stalled after the burst of the bubble, many of them are moving to states that have been more successful in creating jobs in the second half of the decade, like Texas.

The recovery of California's Relocation Metros is slow. The hard-hit construction sector will take time to recover, considering the large stock of cheap repossessed housing on the market. The construction jobs are not expected to return to values they experienced during the bubble.

Some of these metros rank especially low in higher education attainment. Riverside and Las Vegas are among the least educated metros in the country. Las Vegas has been classified by the Brookings Institution' Global Metro Monitor as the worst performing US

metro during the recovery period. The low higher education attainment is connected with these metros' economic and also ethnic structure, as a large share of their population is formed by Hispanics who have on average lower share of college graduates. Sacramento, Las Vegas and Riverside are slow to recover from the recession with lingering unemployment rates high above the US average: 12, 12 and 13 % respectively (Department of Labor 2011).

Salt Lake City's in-migration peaked with the housing bubble, however, its net domestic migration during the decade was negative. But this negative balance was largely caused by out-migration to two adjacent metros – Ogden and Provo – which is more of a suburban relocation character. For a more comparable analysis I used the whole urban agglomeration with its center in Salt Lake City. The whole contiguous urban area gained considerable in-migration from coastal California. The area also received some hi-tech relocations from California. An example is Adobe Systems' operation in Orem, the part of metro Provo. The hi-tech industry in the area has been connected to Novell, a software company founded in Provo in 1979.

Even metro Salt Lake City without the adjacent metro areas experienced the peak in its in-migration during the bubble. Its adjacent counties have been much more affordable and thus more appealing to the relocating Californians.

Portland was another less obvious metro to be classified as a California's Relocation Metro. However both migration and economic data fit the developmental character. Although Portland was the most expensive California's Relocation Metro to move to, it still kept a reasonable price difference in comparison to coastal California and also migration-matching job creation.

Salt Lake City, Portland and Phoenix fared better during the recovery than the rest of the California's Relocation Metros with unemployment rate 7, 9 and 8 % respectively (Department of Labor 2011).

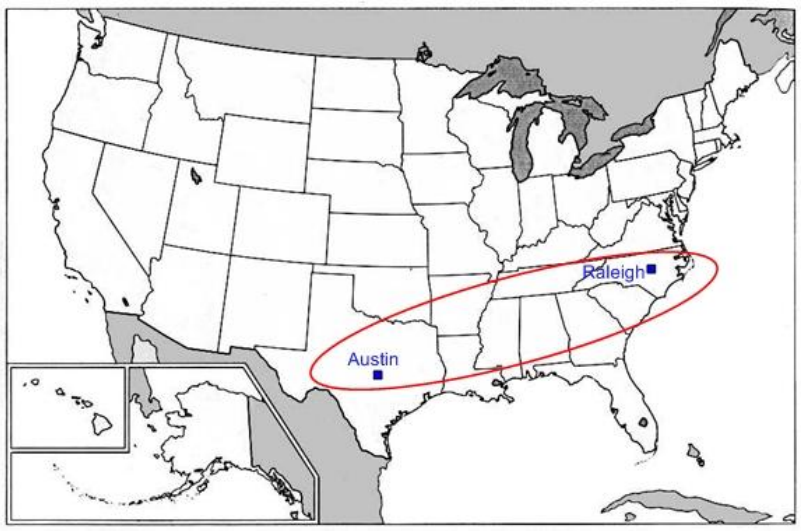
2.2.2 High-Tech Relocation Metros

There are just two metros identified to be part of this type. Metro Austin, TX is larger, Raleigh, NC smaller (see the map 5). They have both been at the top of the growth ranking with 37 and 42 percent respectively. They possess high-ranking universities, high-tech jobs,

lower levels of business and housing costs and regulations, and higher-than-average ratio of public employees. They both possess a public sector employment anchors in form of the state employees (both Raleigh and Austin are capital cities of their respective states) and also substantial employment in universities. It is an economic cocktail great for getting through the crisis. An alternative name for this group could literally be the High-Tech Relocation Capitals.

Even though combined statistical areas were not worked with in this text, it is important to note that the metro Raleigh and the metro Durham constitute single combined statistical area. This functional area is called the Research Triangle and has roughly the same population as metro Austin. This text, though, has analyzed just metropolitan areas, not combined statistical areas, as was explained in the introduction. The Research Triangle is one of the oldest research parks in the United States established in the end of the '50s.

Map 5: The Hi-Tech Relocation Metros



Map by author, using a blank map from nationmaster.com

The name High-Tech Relocation Metros points at the main characteristic that led me to distinguish them from the other relocation metros. The growth in both of the metros is dominantly related to the boom in their high technology sector. Both of the metros are home to high-ranking universities that support the high technology sector with creating qualified workforce and research cooperation opportunities. Austin is nicknamed Silicon Hills. The metro is the seat of the University of Texas at Austin. Raleigh is the seat of the North Carolina

State University at Raleigh. However the whole region of the Research Triangle boasts more top universities such as the Duke University (in Durham). Raleigh and Austin have some of the highest rates of higher education attainment in the metropolitan space and the second highest among the analyzed fastest growing metros, with Washington topping the list. And they have been getting more human capital through the strong domestic migration as they have been among the fastest gainers of highly qualified labor force attracted by their booming hi-tech sector.

The Hi-Tech Relocation Metros have not seen a severe housing market bubble. Their in-migration has not been hit as hard as that of other relocation metros in the recovery period. According to the National Association of Realtors' data median sales price in these two metros has been relatively stable between 2008 and 2010. The 7th Annual Demographia International Housing Affordability Survey classified both of the metros as moderately unaffordable in 2010. Austin has been the most successful large American metro during the recovery period according to the Brookings Institution's Global Metro Monitor. Austin's and Raleigh's unemployment rate in May 2011 has been 7 and 8 % respectively (Department of Labor).

In Austin and also in Raleigh have recently been tendencies towards the smart growth policies. Both of the metros have been among the most sprawling in the country.

2.2.3 Florida Relocation Metros

Three of the fastest growing metros can be classified as the Florida Relocation Metros (see the map 6). These metros have been receiving movers from the North and from metro Miami who have been escaping overheated housing markets.

Metro Miami has been classified as seriously unaffordable housing market. Two of the Florida Relocation Metros, Orlando and Tampa, were classified by Demographia (US Metropolitan Area Population & Migration: 2000−2009) as "Safety Valve" metros. The "Safety Valve" markets are those metropolitan housing markets that received high numbers of movers from the primary bubble markets. These people relocating to the "Safety Valve" metros to escape the price inflation contributed to the spread of the bubble and price escalation in their destinations. Jacksonville is not considered a "Safety Valve" market because it did not experience a severe housing bubble. This fact does not change the reality of

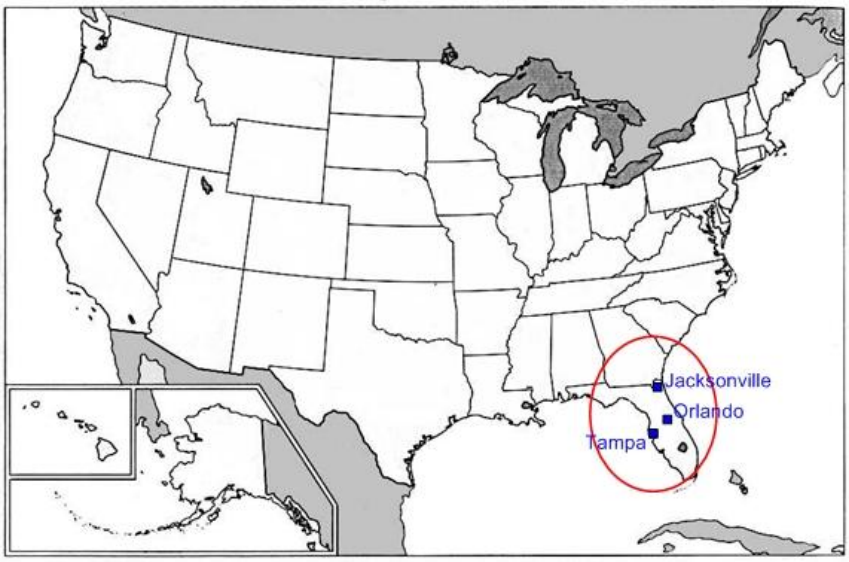
Jacksonville being a destination for people relocating primarily in search of cheaper housing. Jacksonville has like the two other metros gained most of its growth from domestic migration.

With the burst of the bubble and ensuing recession the domestic migration diminished. In the case of Orlando the domestic migration even reversed so that it has actually started to lose people by domestic migration during the recovery period. The state of Florida was losing population by migration in the last two years of the decade. The strongest in-migration to Florida occurred in the first half of the decade. The metros have been classified as moderately unaffordable (Orlando and Tampa) and affordable (Jacksonville) housing markets (7th Annual Demographia International Housing Affordability Survey). Florida is among the states enforcing the smart growth policies. All of the Florida's Relocation Metros are classified by the Brookings Institution (Puentes et al. 2006) as having the same category of smart growth policy – reformed growth management. More on the effects of Florida's smart growth management on housing affordability can also be found in Anthony (2003).

The economic recovery has been weak for the Florida Relocation Metros. Another weak point in the prospects of these metros is a low educational level of their inhabitants which is connected to lower incomes per capita. Restoration of job creation will be crucial for region's future growth. The metros cannot rely on the recovery of the lost construction jobs which is not likely to happen in the nearest future. They should search for growth in other sectors. Traditionally strong tourism sector, such as Orlando's amusement parks and conventions, or metro Tampa's beach hotels, has been hit by the recession as well. Jacksonville fared considerably better during the recovery period as it has gotten a lot of consumption from the public sector, especially its military installations. Its better recovery performance did not mirror in significantly lower unemployment rate as Jacksonville had 10 %, Orlando 10 % and Tampa 11 % in May 2011 (Department of Labor).

On the positive side the region remains attractive with its warm climate popular among the consumption-bringing northern retirees and "snow birds" (those spending their winter in Florida). The real estate remains cheap compared to Miami and the North. If the job creation gets restored the metros might be able to attract younger, active-age migrants. The character of business relocations will determine whether the region will also attract more highly-skilled movers.

Map 6: The Florida Relocation Metros



Map by author, using a blank map from nationmaster.com

2.2.4 Texas' Powerhouses

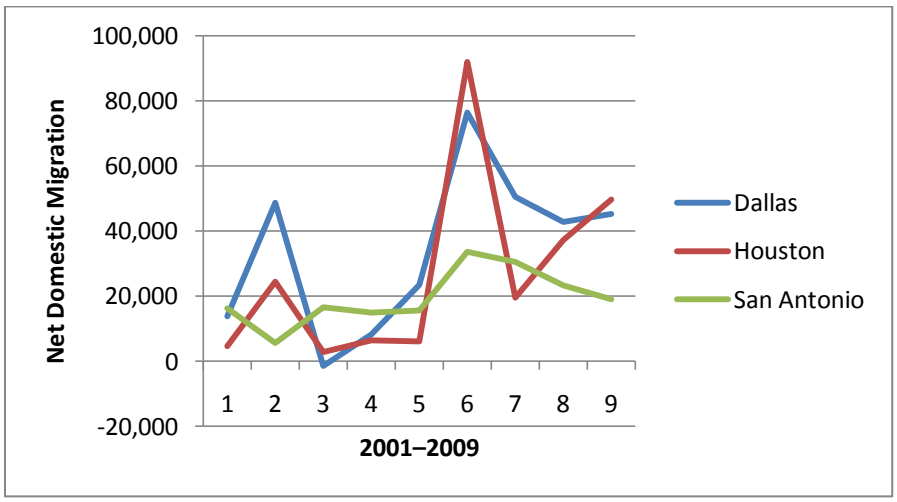
The designation "powerhouses" bears the connotation of the importance of the energy sector for the Texas metropolises. Their growth is not primarily driven by relocation. It is their endogenous economic strength that led me to classify them into a distinct group.

San Antonio is closer to the border (see the map 7). However it has received much weaker inflow of international migrants than Houston and Dallas. San Antonio recorded high gains in domestic migration. Dallas and Houston received both high rates of domestic and international migration. Their natural increase was also high. These metros have been booming. Job creation remained in good shape even after the burst of the housing bubble. The influence of high oil prices quickly comes to mind. The economy of the metros, though, is more diversified. They are not just the seats of the biggest energy companies that are perennial at the top of Fortune 500 list. They have more of the seats of big companies. Especially Dallas-Fort Worth with headquarters of communications and hi-tech companies. American Airlines have their headquarters in Fort Worth.

On the next page there is the chart 31 showing domestic migration patterns for the Texas' Powerhouses. Their migration dynamics in the first half of the decade were clearly influenced by the early 2000s recession. As the analysis of the gross metropolitan product growth showed in the analytical part of this text, the clearest similarity between the three

Powerhouses is their relative resilience to the late 2000s economic crisis, especially the housing bust. The chart below shows that the metros experienced their highest in-migration with the height of the housing bubble, attracting movers with their low housing prices and decent job prospects. The late 2000s crisis has not had nearly as large effect on their in-migration, as did the smaller early 2000s recession.

Chart 31: Net Domestic Migration, Metros, 2001–2009



Source: US Census Bureau

San Antonio shows lower economic performance and lower educational attainment. Its GMP per capita is almost a half lower than that of the two Texas leading metros. Its workforce is cheap enough to be a destination of manufacturing relocations. But still studies such as the Metropolitan Monitor have shown large job growth potential and bright prospects for this metro. It is not going to reach significantly closer to Houston and Dallas, but it will continue to be an important player.

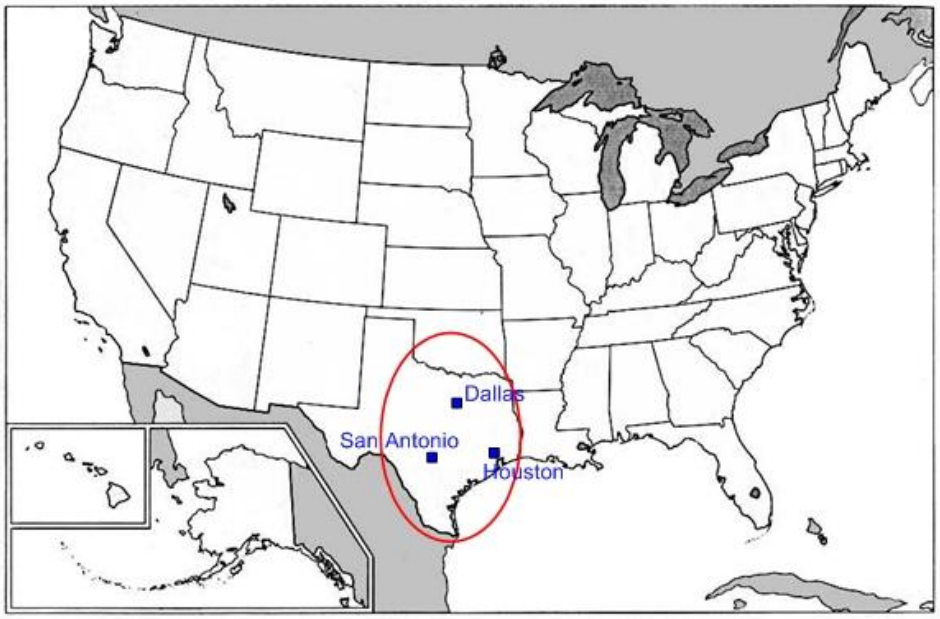
Houston and Dallas seem to continue gaining more weight in the national metropolitan hierarchy. A lot depends on the development in the energy sector which is still a backbone of the Texas economy.

Texas' housing remained affordable and the real estate development is one of the least regulated in the country. Although Houston and Dallas boast a level of per capita GMP comparable to the Northeast or coastal California, their less regulated housing markets

remained affordable. In other words, despite Dallas and Houston having high incomes, their real estate has remained affordable.

The metros recorded better than national average unemployment rates at 8 % (Houston and Dallas) and 7 % (San Antonio) in May 2011 (Department of Labor).

Map 7: The Texas' Powerhouses



Map by author, using a blank map from nationmaster.com

2.2.5 The Southeastern Relocation Metros

In the beginning of the analysis I have compared Atlanta with the two similarly large Texas metros. The analysis showed that Atlanta's economy was more influenced by the bubble. Atlanta's economy did not perform well already before the beginning of the crisis. There was an apparent discrepancy between its job creation and the high rate of domestic in-migration and also high rate of natural increase. Atlanta's economy grew slower than its population. The gross metropolitan product per capita was steadily declining, and with the downturn in the housing market the decline was accelerated with the jobs lost in the construction sector. Atlanta remained one of the most affordable housing markets. Its recovery from the crisis has been classified by the Brookings Institution's Global Metro Monitor as one of the worst in the nation, and even in the world.

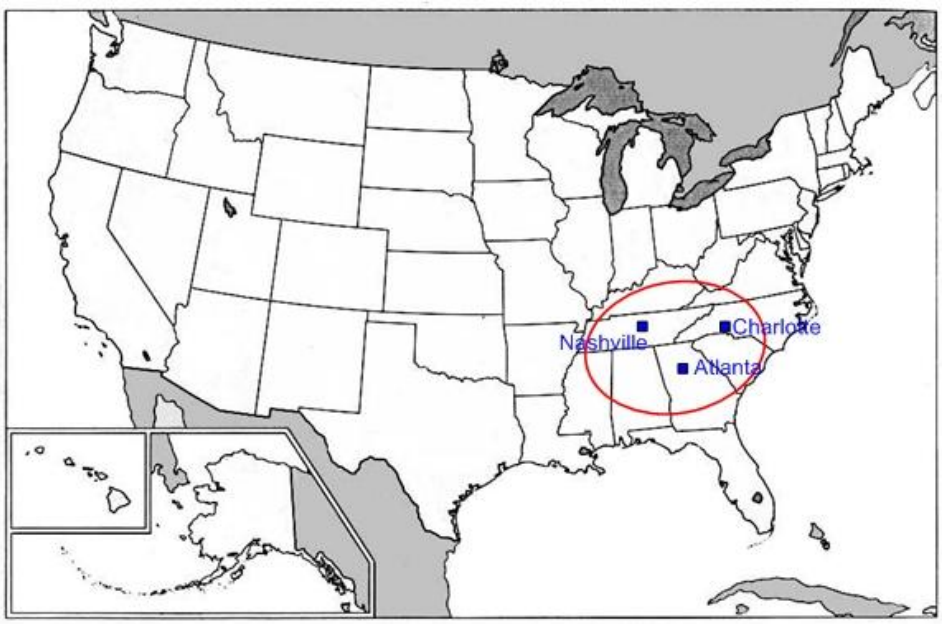
Charlotte with its well-paying financial sector jobs and low cost housing has been attracting large waves of domestic migrants, particularly from the Northeast. And although there was a sharp decline in the local economy as an immediate aftermath of the crisis, the metro seems to be rebounding despite its troubled financial sector.

Nashville has also been doing well on its way out of the crisis, however, from lower economic values than Charlotte.

After all, what has led me to classify these three metros (see the map 8) into one group of the Southeastern Relocation Metros?

They have all been dominantly relocation metros in character. That means they have owed a high proportion of their growth to domestic migration gains. People have been moving to these metros largely for the same reasons − low cost housing and job creation. The migration peaked with the height of the housing bubble and then fell precipitously (see the chart 32). The origin of the migrants has also been to large degree identical, with the bulk of them coming from the expensive North. The northern metros have been losing hundreds of thousand movers by domestic migration. The domestic migration of all of the three metros has also been sensitive to the early 2000s recession, as is apparent from the chart 32.

Map 8: The Southeastern Relocation Metros



Map by author, using a blank map from nationmaster.com

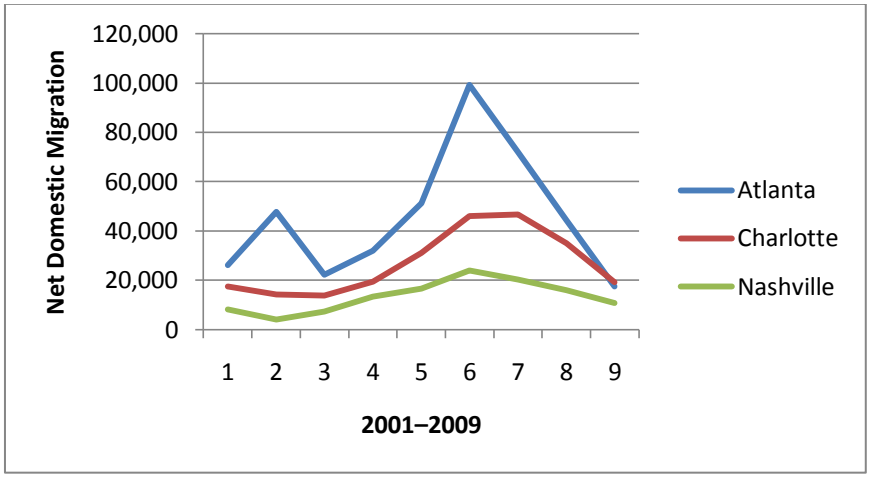
The values of human capital in all of the Southeastern Relocation metros are positive precursors to growth potential. Atlanta's prospects are the least certain, as the metro definitively lost its growth momentum during the crisis, and its recovery period has been weaker. Atlanta was losing its pace already before the crisis as its job growth did not match the continuing rapid population increase, especially during the bubble-triggered in-migration. With a renewed job creation and its low cost housing it can again be a growing relocation destination. The unemployment rate in Atlanta was 10 % in May 2011. Charlotte was also at 10 %, while Nashville recorded average 9 % (Department of Labor).

Atlanta remains among the most affordable housing markets in the nation. With its pro-growth administration and one of the least urban containment oriented growth policies, the metro is poised to remain sprawling, affordable housing Mecca.

Atlanta is one of the most sprawling urban regions in the world. One could think that Atlanta with its low density neighborhoods does not suffer from congestion. On the contrary Atlanta is frequently cited as one of the worst congested metros in the country. Despite the rise of suburban employment centers, Atlanta's road network seems to be undersized and overloaded. The MARTA rail project still plays a marginal role with a small area covered and low share of commuters served.

Atlanta's growth in the last decade has really been driven by the cheap housing. Without a matching job creation, though, the growth could well end even without the recession. Although probably not abruptly, but rather gradually.

Chart 32: Net Domestic Migration, Southeastern Relocation Metros, 2001–2009



Source: US Census Bureau

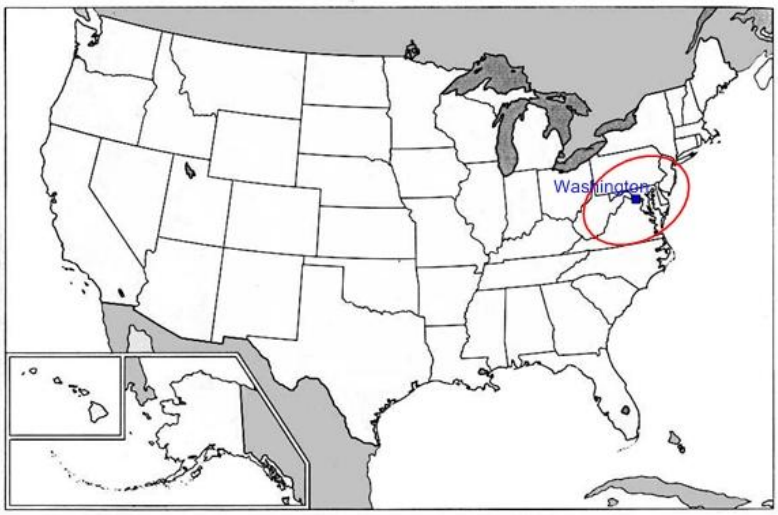
2.2.6 The Federal Government Metro

Metro Washington which encompasses four federal entities – District of Columbia, Maryland, Virginia and West Virginia (see the map 9) – has been classified apart from all the other fast growing metros.

Its growth character has been distinct from all the other fastest growing metros. Although the metro recorded very positive results in the gross metropolitan product per capita metric, boosted by federal spending, it was a net loser of domestic migrants. The chart 33 shows clearly that Washington was losing migrants to the bubble gainers, while the metro itself experienced a severe housing bubble. Nevertheless, Washington did not lose domestic migrants as heavily as the northern metros. Its smart growth policy combined with high demand makes the housing prices less affordable, but still quite competitive with New York or Boston.

Even with its hi-tech development in the suburbs, and headquarters of some Fortune 500 companies, the economic fate of Washington remains connected to the federal government. Metros with strong public sector have fared considerably better than housing bubble driven economies during the crisis.

Map 9: The Federal Government Metro

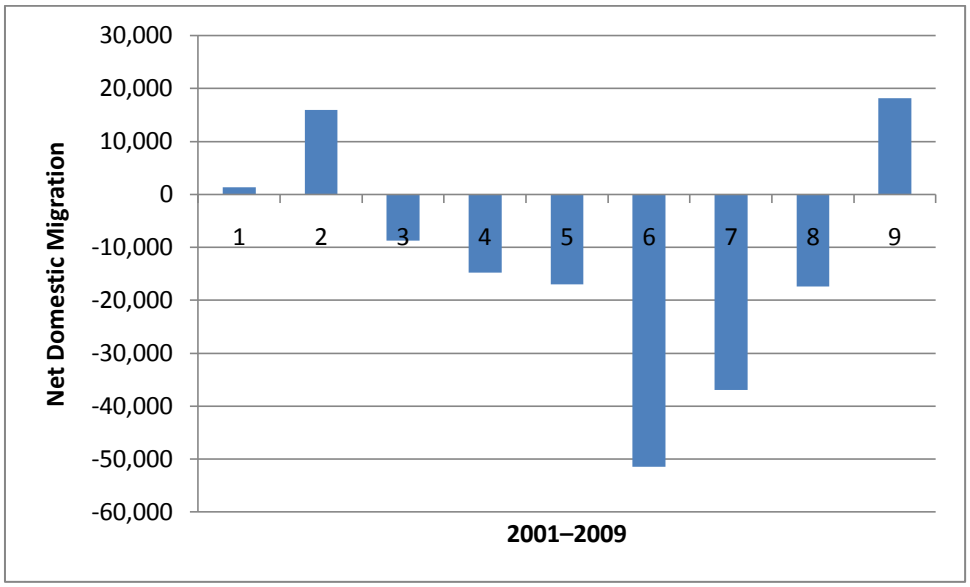


Map by author, using a blank map from nationmaster.com

Metro Washington's unemployment rate remains under 6 % in 2011 (Department of Labor), well under the national average of 9 %. The metro did not really see much of the recession.

The Federal Government Metro meets another growth condition − human capital quality. It has to be noted again that metro Washington enjoys an enormous power of human capital as it benefits from the highest proportion of college graduates among the US metropolitan areas. The rate of bachelor's degree attainment is 47 % (for example State of the Metropolitan America, Interactive Map).

Chart 33: Net Domestic Migration, Metro Washington, 2001–2009



Source: US Census Bureau

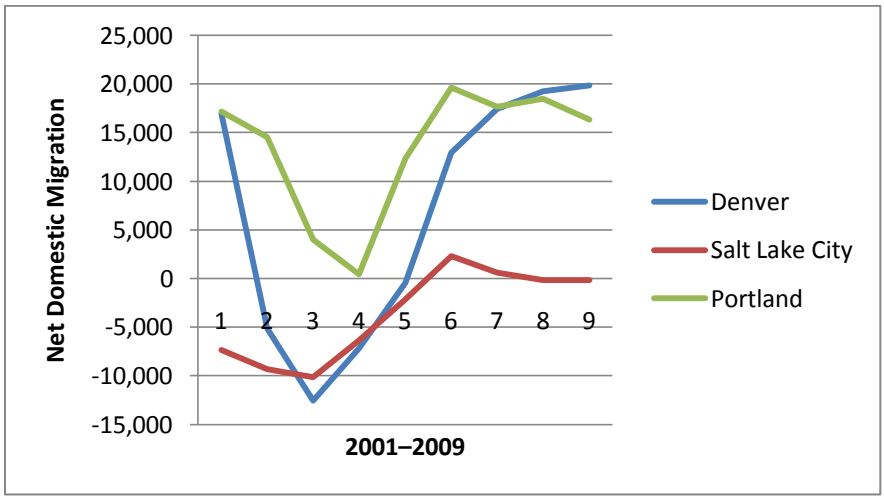
2.2.7 The Central Relocation Metro

Without a prevailing source region for Denver's in-migration, and with other specific characteristics of this metro found in the analysis, it was reserved a distinct place in the typology as the Central Relocation Metro. I have applied the designation "Central" because of its strategic position in the United States that makes Denver an important transport hub between the East and the West, and also for being the largest urban center in a vast region (see the map 10).

Denver has been a national draw in domestic migration, as it succeeded in attracting migrants from metros all over the country (Pilkerton 2007). Denver has not seen a downfall in migration following the burst of the bubble, despite being classified as a metro with severe housing bubble (see the chart 34). Denver saw in-migration boom during the '90s, after its weak '80s with the economic crisis related to the oil price fall. Since the '80s Denver's economy diversified successfully becoming less dependent on natural sources price volatility. Denver's in-migration was hit by the early 2000s recession, when the metro was actually losing people by domestic migration. Then it caught the bubble spike and as of 2009 its in-migration still did not fall. Below, Denver's net migration is compared with that of two California's Relocation Metros. Portland and Salt Lake City display a peak during the bubble.

I compared Denver in the analysis mostly with California's Relocation Metros. But as the reader can see below graphically presented, Denver differed in many other developmental parameters (see the charts 34 and 35).

Chart 34: Net Domestic Migration, Metros, 2001–2009

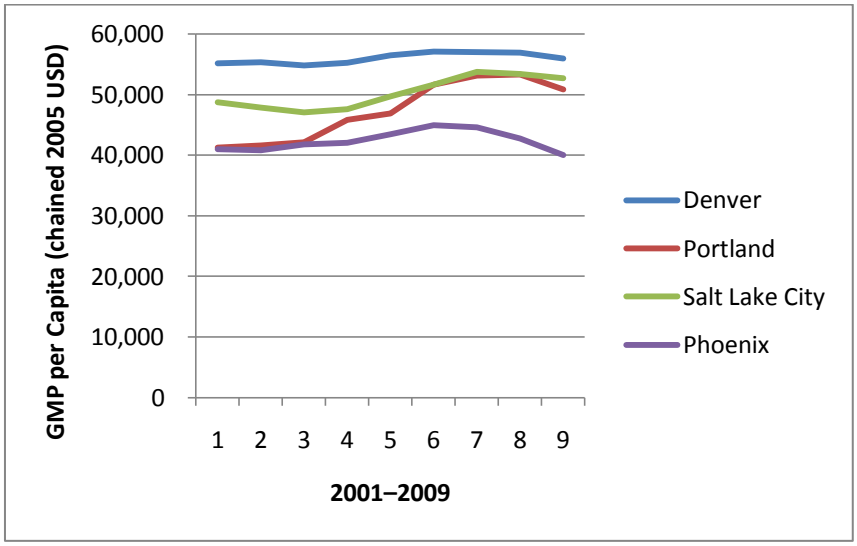


Source: US Census Bureau

Denver's economic recovery from the recession has not been strong and its relocation character has been slowly diminishing. Unemployment was at national average of 9 % in May 2011 (Department of Labor). Its housing and business costs are not among the lowest. Although Demographia (US Metropolitan Area Population & Migration: 2000−2009) classifies Denver's housing crisis as severe it has not had a profound effect on its economy,

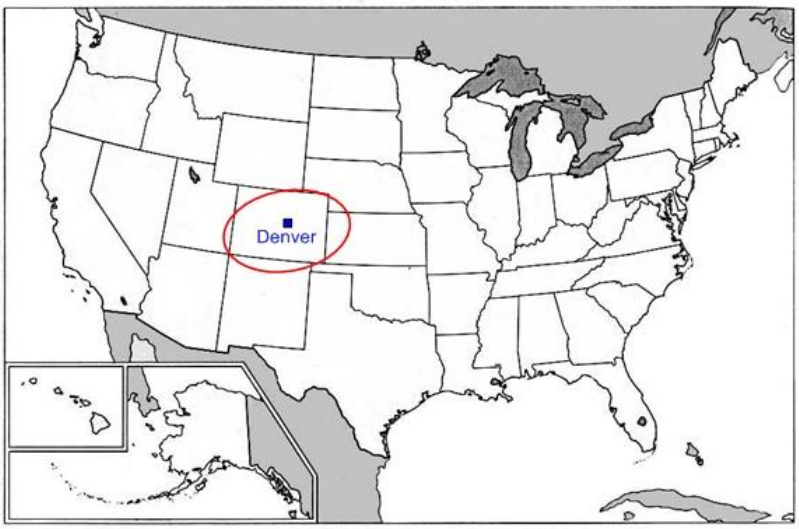
which remained more stable than in other fast growing metros in the West region (see the chart 35). Relatively high costs of housing might be partly a result of Denver's growth control policy restraining the housing development to some degree. Metro Denver's median home sale price for 5/2011 was 239 thousand dollars, not much lower than the 7/2007 peak at 256 thousand (Zillow).

Chart 35: Gross Metropolitan Product per Capita, Metros, 2001–2009



Source: Bureau of Economic Analysis

Map 10: The Central Relocation Metro



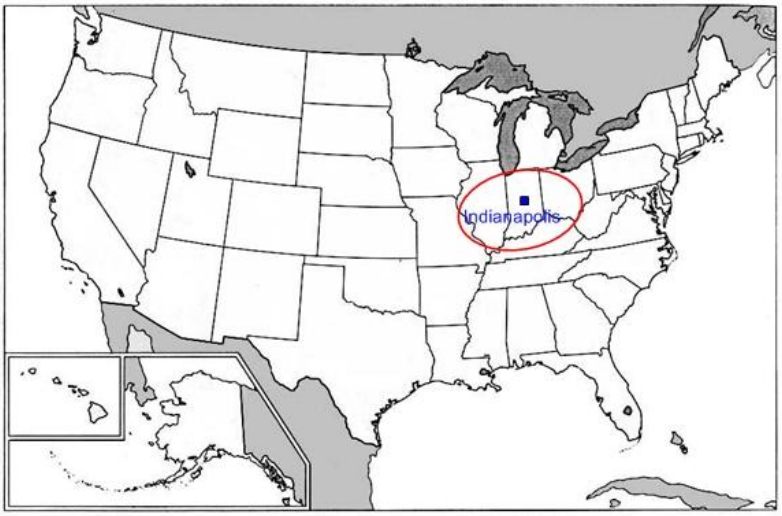
Map by author, using a blank map from nationmaster.com

2.2.8 The Midwest Relocation Metro

Another distinct type of a dynamically growing large metro I have identified is the Midwest Relocation Metro. Indianapolis is the only metro fitting this category. Indianapolis is the only Rust Belt city that has made it to the fastest growing list (see the map 11). Indianapolis has been very slow in recovery, the worst-hit sectors being manufacturing and construction (Anderson 2011). Despite of that its unemployment rate fell under the national average, at 7 %. Indianapolis has one of the most affordable housing markets in the country.

Like other relocation metros Indianapolis has gained a substantial deal of its growth by domestic migration. Other Midwest metros like Chicago, Detroit and Columbus figured among the in-migration sources.

Map 11: Midwest Relocation Metro



Map by author, using a blank map from nationmaster.com

3 CONCLUSION

The major result presented in my thesis is the developmental typology of the fastest growing portion of the metropolitan United States from 2000 to 2010. The hypothesis No. 1 proposing that the intensity of different growth factors would not be identical for all of the analyzed metros has undoubtedly been proven in the analytical part of the text. The analysis also showed that, as the hypothesis No. 2 suggested, some of the metros possessed different sets of developmental factors intensities that had been behind their rapid growth. The typological part of the text presented the similar developmental patterns for some of the metros, proving the hypothesis No. 3. The typology has been, as the hypothesis No. 4 proposed, based on the identification of the similarities and differences in the growth patterns between the metros. These were discussed in the typological/classification part of the text.

In the end of the conclusion there are listed and also displayed in the map 12 the final results of the classification, the different types of metropolitan areas according to the developmental characteristics. There are six California's Relocation Metros, two Hi-Tech Relocation Metros, three Florida Relocation Metros, three Texas' Powerhouses, and three Southeastern Relocation Metros among the twenty fastest growing large metros.

Three of the metros present each a distinct developmental type of their own. A major part of the metropolitan areas has been classified as "Relocation metros". These are metropolitan areas with substantial domestic in-migration motivated by lower costs. These areas have been destinations for business relocations that sought lower costs as well.

As one can see in the map 12, most of the developmental types are limited to one region, some just to one metropolitan area. Only the two of the High-Tech Relocation Metros are divided by larger distance, although they share their location in the South. Indianapolis is the only metropolitan area from out of the Sun Belt.

The California's Relocation Metros are metropolitan areas that have gained dominant inflow of domestic in-migration from expensive coastal California. This type has the largest share of the fastest growing metros. Six out of the twenty metros fit this category.

High-Tech Relocation Metros have grown with the inflow of people attracted by the booming hi-tech sector and affordable housing. The hi-tech businesses have relocated into these metros because of their quality sector infrastructure and lower costs. On the basis of their structural analysis and recovery performance, the Hi-Tech Relocation Metros seem to have the best prospects for growth in the coming years.

Florida Relocation Metros is another type of metropolitan areas that has benefitted from relocation of people and businesses. The main sources of their in-migration were Miami and northern metros, all of them with considerably higher housing and business costs. As in other relocation types these metros gained most of the domestic migrants at the peak of the housing bubble.

Texas' Powerhouses is a group of the three biggest Texas metros. Their main difference in comparison with the relocation types of metros has been the endogenous character of their growth. Their economic growth has not relied on relocation of people and businesses. They have displayed some of the highest rates of job creation in the nation. There is no doubt that the Texas metros have benefitted from the high prices of oil. Another downturn in oil prices can seriously affect the dynamic growth these metros have seen in the second half of the last decade. The last such crisis occurred from the '80s to the first half of the '90s. The Texas' Powerhouses have been spared of the dramatic downturn in housing market as the prices have not escalated as much as in the severe bubble metros. Housing remained among the most affordable and the least regulated of the metropolitan America. Even with their diversified economies the Texas' Powerhouses metros' fortunes will be sensitive to oil prices as their energy sector still forms the core of their economy.

Southeastern Relocation Metros are another group whose development was dominated by relocation gains. Atlanta, by far the largest member of the group, was one of the worst recession-hit metros in the nation, even without experiencing a severe housing bubble. Its recovery has been slow. Other two smaller members of the group have been recovering faster. Positively, housing in these metros remains, especially in Atlanta, much more affordable and less regulated than in the source regions of their in-migration. A low level of job creation remains a problem, particularly in Atlanta.

Washington, the Federal Government Metro, with its robust federal government connected economy has not felt much of the recession, although it suffered from the housing

bubble. Some hi-tech industries have been thriving as well. Metro Washington ranked among the top performers during the recovery period.

Denver, the Central Relocation Metro, with its strategic position and relatively stable economy has earned a unique place in the typology. Its recovery from the recession, though, shows mixed results.

The last developmental type I have identified is the Midwest Relocation Metro which has also just one member. Indianapolis surpassed the 15 % growth limit to be included in the typology just by little margin. Still it was the fastest growing metro in the Midwest Region, and the only city from the Rust Belt included in this typology. Maybe more importantly, Indianapolis has also been the only non-Sunbelt (or Frostbelt) fastest growing metro. Its in-migration patterns and economic development direction differed sufficiently from other fast growing metros to form its own type in the classification.

The migration to the Sunbelt metropolitan areas seems to be a trend that will continue undiminished in the foreseeable future. This does not hold true for all of the Sunbelt metros, though. The parts of the Sunbelt that have been receiving domestic migrants for decades, and have more advanced economy, such as the coastal metros of California and Miami, have already begun to lose domestic migrants. The costs of doing business and the cost of living have become uncompetitive. Housing is the largest and arguably the most geographically variable major item of cost of living across the United States. The coastal metros of California and Miami, all of these developed markets with more restrained housing supply have been losing domestic migrants in hundreds of thousands, mostly to other, cheaper Sunbelt metros. This outflow that peaked with the climax of the housing bubble contributed to the inflation of home prices in the most proximate metropolitan areas. These proximate metros were the California's Relocation Metros for the coastal California, and the Florida Relocation Metros for Miami. These metros were receiving in-migration from other regions, as well. The massive outflow from the non-Sunbelt metros peaked roughly at the same time. The high outflows mostly to the Sunbelt came from expensive, swelling-bubble northeastern metros, Chicago, but also from the cheap housing, weak economy Rustbelt metros. The central part of the country has been the least affected by the housing bubble and the late 2000s recession. Especially the south-central part (Texas) was receiving in-migration in the second half of the decade.

The further development of the housing prices that are still very high in some markets will have a large impact on the economy and the movement of population. The prices in many markets still seem to be correcting the bubble. The domestic migration rate in the end of the decade declined to an all time low. The overall United States economy is recovering from the recession slower than was expected for 2011.

The data for the end of the last decade showed that the Hi-Tech Relocation Metros have been the developmental type of the fastest growing metros performing best into the beginning of the new decade. The Texas' Powerhouses economies also fared well, boosted with the favorable oil prices. These two typological groups of the large fastest growing metros have been identified as those having the best prospects in the post-recession development. This conclusion is in line with the hypothesis No. 5 with the finding of the two types with the best post-recession prospects.

At this point I can conclude that I have responded to all of the research questions and proven all of the proposed hypotheses. It is captivating to see the next decade unfold. It might be fruitful to analyze the 2010−2020 decade with a similar methodology and compare the identified trends to the preceding decade.

The fastest growing metros ordered by developmental type:

California's Relocation Metros:

- Las Vegas
- Phoenix
- Riverside
- Sacramento
- Portland
- Salt Lake City

High-Tech Relocation Metros:

- Austin
- Raleigh

Florida Relocation Metros:

- Jacksonville
- Orlando
- Tampa

Texas' Powerhouses:

- Dallas
- Houston
- San Antonio

Southeastern Relocation Metros:

- Atlanta
- Charlotte
- Nashville

Federal Government Metro:

- Washington

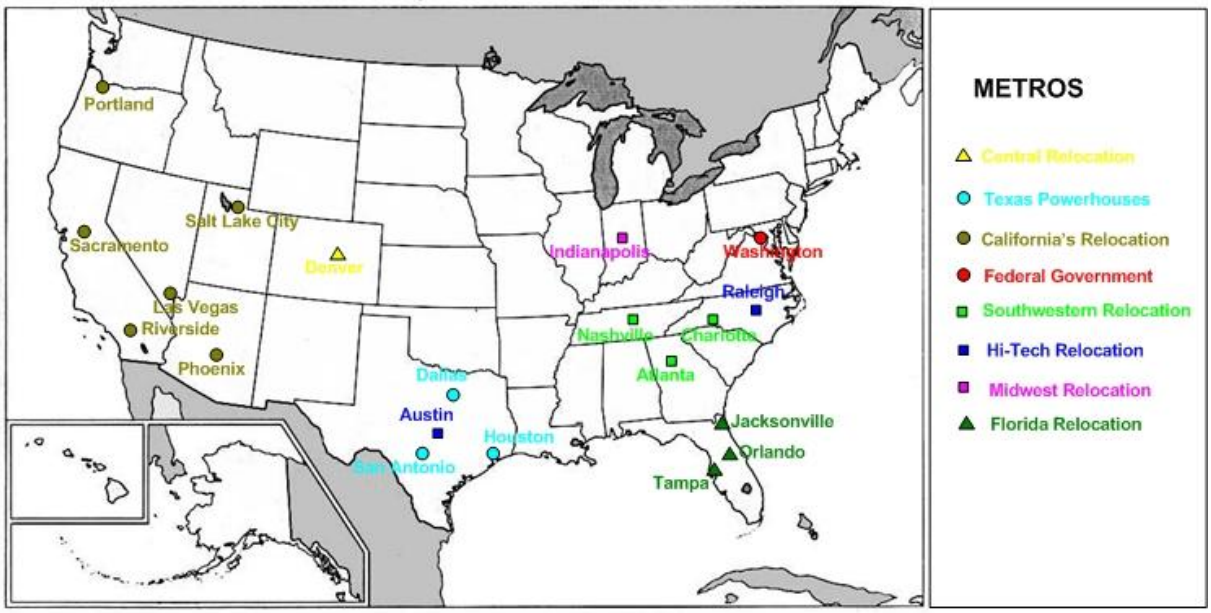
Central Relocation Metro:

- Denver

Midwest Relocation Metro:

- Indianapolis

Map 12: The Typology of the Fastest Growing Large Metros, 2000−2010



Map by author, using a blank map from nationmaster.com

Appendix 2

Table 12: Short Names Used for Metropolitan Areas

Full Name	Short Name Used in the Text
Atlanta-Sandy Springs-Marietta, GA MSA	Atlanta
Austin-Round Rock-San Marcos, TX MSA	Austin
Boston-Cambridge-Quincy, MA-NH MSA	Boston
Charlotte-Gastonia-Rock Hill, NC-SC MSA	Charlotte
Chicago-Joliet-Naperville, IL-IN-WI MSA	Chicago
Dallas-Fort Worth-Arlington, TX MSA	Dallas or Dallas-Fort Worth
Denver-Aurora-Broomfield, CO MSA	Denver
Houston-Sugar Land-Baytown, TX MSA	Houston
Indianapolis-Carmel, IN MSA	Indianapolis
Jacksonville, FL MSA	Jacksonville
Las Vegas-Paradise, NV MSA	Las Vegas
Los Angeles-Long Beach-Santa Ana, CA MSA	Los Angeles
Miami-Fort Lauderdale-Pompano Beach, FL MSA	Miami
Nashville-Davidson–Murfreesboro–Franklin, TN MSA	Nashville
New York-Northern New Jersey-Long Island, NY-NJ-PA MSA	New York
Ogden-Clearfield, UT MSA	Ogden
Orlando-Kissimmee-Sanford, FL MSA	Orlando
Phoenix-Mesa-Glendale, AZ MSA	Phoenix
Portland-Vancouver-Hillsboro, OR-WA MSA	Portland
Provo-Orem, UT MSA	Provo
Raleigh-Cary, NC MSA	Raleigh
Riverside-San Bernardino-Ontario, CA MSA	Riverside or Riverside-San Bernardino
Sacramento–Arden-Arcade–Roseville, CA MSA	Sacramento
Salt Lake City, UT MSA	Salt Lake City
San Antonio-New Braunfels, TX MSA	San Antonio
San Diego-Carlsbad-San Marcos, CA MSA	San Diego
San Francisco-Oakland-Fremont, CA MSA	San Francisco
San Jose-Sunnyvale-Santa Clara, CA MSA	San Jose
Tampa-St. Petersburg-Clearwater, FL MSA	Tampa
Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	Washington

4 REFERENCES

4.1 Literature

ANTHONY, J. (2003): The effects of Florida's Growth Management Act on housing affordability, Journal of the American Planning Association, Vol. 69, No. 3, p. 282-295

BARNA, J. W. (2002): The Rise and Fall of Smart Growth in Austin. Cite 53, Spring 2002, p. 22-24.

BOWLES, J. (2009): Reviving the City Of Aspiration: A Study of The Challenges Facing New York City's Middle Class. www.newgeography.com/ (retrieved 7/2/2010)

CARNATHAN, M. (2011): Atlanta Metropolitan Area: High population growth, employment losses adding to income woes. http://metrotrends.org/spotlight/atlanta.cfm (retrieved 20/6/2011)

COLLIER, K. (2011): Melbourne home property prices plunge. Herald Sun. www.heraldsun.com.au/.../melbourne-home-property-prices-plunge/story (retrieved 7/7/2011)

COX, W. (2011a): The Costs of Smart Growth Revisited: A 40 Year Perspective. www.newgeography.com/.../002324-the-costs-smart-growth-revisite (retrieved 7/9/2011)

COX, W. (2011b): The Evolving Urban Form: Dallas-Fort Worth. http://www.newgeography.com/content/002178-the-evolving-urban-form-dallas-fort-worth

COX, W. (2011c): The Housing Crash and Smart Growth. National Center for Policy Analysis. http://www.ncpa.org/pdfs/st335.pdf (retrieved 7/17/2011)

COX, W. (2010a): The Housing Bubble: The Economists Should Have Known. http://www.newgeography.com/content/001739-the-housing-bubble-the-economists-should-have-known

COX, W. (2010b): Special Report: Metropolitan Area Migration Mirrors Housing Affordability. http://www.newgeography.com/content/001485-special-report-metropolitan-area-migration-mirrors-housing-affordability

COX, W. (2010c): Queensland: Housing Relief on the Horizon? http://www.newgeography.com/content/001505-queensland-housing-relief-horizon

COX, W. (2009): Special Report - Domestic Migration Bubble and Widening Dispersion: New Metropolitan Area Estimates. http://www.newgeography.com/content/00690-special-report-domestic-migration-bubble-and-widening-dispersion-new-metropolitan-area

COX, W. (2008a): How Smart Growth Exacerbated the International Financial Crisis. The Heritage Foundation Report. www.heritage.org (retrieved 6/7/2010)

COX, W. (2008b): Sprawl beyond Sprawl: America Moves To Smaller Metropolitan Areas. http://www.newgeography.com/content/00187-sprawl-beyond-sprawl-america-moves-smaller-metropolitan-areas (retrieved 7/3/2010)

DOWNS, A. (2004): Growth management and affordable housing: do they conflict? Brookings Institution Press. 290 p.

DUBOW, C. (2006): Foreclosures: Down, But Not Much Longer. BusinessWeek. http://www.businessweek.com/ (retrieved 3/2/2011)

EWING, R. et al. (2002): Measuring Sprawl and Its Impact. smartgrowthamerica.org (retrieved 3/22/2011)

FREY, W. H. (2011): Migration Declines Further: Stalling Brain Gains and Ambitions. www.brookings.edu/ (retrieved 2/2/2011)

FREY, W. H. (2010): Texas Gains, Suburbs Lose in 2010 Census Preview. brookings.edu/ (retrieved 9/20/2010)

FREY, W. H. (2009): Bursting "Migration Bubble" Favors Coastal Metros, Urban Cores. http://www.brookings.edu (retrieved 5/14/2010)

GLAESER, E. L. (2010): Betting on Atlanta. Economix (New York Times). economix.blogs.nytimes.com/2010/03/09/betting-on-atlanta/ (retrieved 5/12/2010)

GLAESER, E. L. et al. (2008): Housing supply and housing bubbles. Journal of Urban Economics. Volume 64, Issue 2, September 2008, p. 198-217

GLAESER, E. L. and GYOURKO, L. (2003): The Impact of Building Restrictions On Housing Affordability. Economic Policy Review, 2003, 9(June 2), p. 21-39

HALL, P. et al. (1973): The containment of urban England. George Allen & Unwin, Political Science, Volumes 1-2, 464 p.

HENDERSON, J. (2008): Will Farmland Values Keep Booming? Economic Review, Federal Reserve Bank of Kansas City, p. 81−104.
http://www.kansascityfed.org/Publicat/ECONREV/PDF/2q08henderson.pdf (retrieved 6/3/2011)

HOAK, A. (2010): Highest foreclosure rate last year? Las Vegas. MarketWatch.
http://www.marketwatch.com/story/the-20-cities-with-the-highest-foreclosure-rates-2010-01-28?pagenumber=2 (retrieved 7/5/2011)

KOHL, O. (2008): Vybrané trendy vývoje obyvatelstva a jejich regionální diferenciace ve Spojených státech po roce 1980. Bachelor's Degree Final Thesis (in Czech), Department of Human Geography and Regional Development, Faculty of Science, Charles University, Prague, 121 p.

KOTKIN, J. (2010a): North America's Fastest-Growing Cities. http://www.newgeography.com/ (retrieved 10/23/2010)

KOTKIN, J. (2010b): California suggests suicide. Forbes. http://www.forbes.com/ (retrieved 11/19/2010)

KOTKIN, J. (2011): The Protean Future of American Cities. Forbes. http://www.forbes.com/ (retrieved 4/27/2011)

KOTKIN, J. (2000): The New Geography: How the Digital Revolution Is Reshaping the American Landscape. Random House, 256 pages.

KRUGMAN, P. (2011): The Texas Omen. The New York Times. http://nytimes.com/ (retrieved 2/8/2011)

KRUGMAN, P. (2005): That Hissing Sound. The New York Times, August 5, 2005. http://nytimes.com/ (retrieved 9/13/2010)

LEWIS, S. D. (2007): An Assessment of Smart Growth Policies in Austin, Texas. Applied Research Projects, Texas State University-San Marcos. Paper 267. 101 p.

O'CONNOR, P. (2010): GDP Estimates for Metro Areas. http://www.qualityinfo.org/olmisj/ArticleReader?itemid=00006113 (retrieved 3/23/2011)

PINKERTON, J. (2007): Migration in Greater Kansas City and its Peer Metros. www.metrooutlook.org/ (retrieved 5/10/2010)

PUENTES, R. et al. (2006): From Traditional to Reformed: A Review of the Land Use Regulations in the Nation's 50 largest Metropolitan Areas. Brookings Institution Reasearch Brief. http://www.brookings.edu (retrieved 6/23/2010)

RENN, A. M. (2011): New Metro GDP Data Released. http://www.newgeography.com/ (retrieved 3/2/2011)

RENN, A. M. (2010a): Is it Game Over for Atlanta? http://www.newgeography.com/ (retrieved 3/24/2011)

RENN, A. M. (2010b): State GDP Performance. http://www.newgeography.com/ (retrieved 2/5/2011)

SANCHEZ, T.W. and LANG, R.E. (2002): Security versus Status? Metropolitan Institute at Virginia Tech. www.mi.vt.edu/publications/otherresearch/document-pdfs/security.pdf (retrieved 6/20/2011)

SINGER, A., and WILSON, J. H. (2010): The Impact of the Great Recession on Metropolitan Immigration Trends. brookings.edu/ (retrieved 2/16/2011)

WATKINS, W. (2011): Fuzzy thinking by Famous Economists. http://www.newgeography.com (retrieved 3/19/2011)

YOUNG, C. (2010): Report: Growth in local economy lags behind nation. http://www.gwinnettdailypost.com/home/headlines/Report_Growth__in_local_economy_lags_behind_nation_111570659.html (downloaded 1/21/2011)

4.2 Sources

Bureau of Economic Analysis: GDP Data for Metropolitan Areas. U.S. Department Of Commerce. www.bea.gov/ (retrieved 4/11/2011)

County-to-county migration data. Internal Revenue Service. www.irs.gov/taxstats/article/0,,id=212695,00.html (5/2/2011)

Demographia US Metropolitan Area Population & Migration: 2000−2009. http://www.demographia.com/db-metmic2004.pdf (retrieved 2/4/2011)

Department of Labor. www.dol.gov/ (retrieved 7/16/2011)

Enterprising States. US Chamber Of Commerce. www.uschamber.com/ (retrieved 6/26/2011)

Fortune 500 List. Forbes. www.forbes.com/ (retrieved 6/17/2011)

Global Metro Monitor: The Path to Economic Recovery. Brookings Institution. http://www.brookings.edu/reports/2010/1130_global_metro_monitor.aspx (retrieved 7/10/2011)

Global Metropolitan Monitor. Brookings Institution. http://www.brookings.edu/~/media/Files/rc/reports/2010/1130_global_metro_monitor/1130_global_metro_monitor.pdf (retrieved 4/5/2011)

Impact of Smart Growth on Housing Affordability. www.demographia.com/ (retrieved 11/17/2010)

Link Between Growth Management And Housing Affordability: The Academic Evidence. http://www.brookings.edu (retrieved 3/3/2010)

Mapping America: Every City, Every Block. New York Times. projects.nytimes.com/census/2010/explorer (retrieved 6/17/2011)

Metro Denver. http://www.metrodenver.org/demographicscommunities/demographics/population.html (retrieved 2/5/2011)

National Association of Realtors. www.realtor.org/ (retrieved 10/5/2010)

Nationmaster.com. www.nationmaster.com/ (retrieved 6/14/2011)

Portland: Urban Growth Boundary Keeps Out Growth. www.demographia.com/ (retrieved 4/10/2010)

State of the Metropolitan America. Brookings Institution. http://www.brookings.edu/~/media/Files/Programs/Metro/state_of_metro_america/metro_america_report.pdf (retrieved 5/1/2011)

State of the Metropolitan America, Interactive Map. Brookings Institution. http://www.brookings.edu/metro/StateOfMetroAmerica/Map.aspx#/?subject=8&ind=75&dist=0_1&data=Number&year=2009&geo=metro&zoom=5&x=999&y=179 (retrieved 7/14/2011)

Trulia. trulia.com/ (retrieved 5/9/2011)

United States Metropolitan Area International Migration Report: 2000−2005. www.demographia.com/ (retrieved 11/17/2010)

U.S. Census Bureau. www.census.gov (retrieved 8/10/2010)

U.S. Census Domestic Migration Data Reveals Heavy Core Area Losses. www.demographia.com/ (retrieved 11/17/2010)

Wikipedia. www.wikipedia.org/ (retrieved 1/16/2011)

Zillow. www.zillow.com/ (retrieved 2/10/2011)

7th Annual Demographia International Housing Affordability Survey. http://www.demographia.com/dhi.pdf (retrieved 3/13/2011)

100 fastest growing counties 2000-2008. US Census Bureau. http://www.census.gov/popest/counties/CO-EST2008-08.html (retrieved 10/14/2010)

2011 US Statistical Abstract. US Census Bureau. census.gov/ (retrieved 6/15/2011)